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CHAS. BETTS, S. B. NOBLE, } Associate Editors.

R. F. JOHNSTONE, Editor. J. C. HOLMES, Hort. Editor.

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The Shell Marls of Michigan.

BY A. WINCHELL,

Professor of Geology and Natural History in the University of Michigan.

It is now more than twelve months since I promised a valued friend that I would undertake a scientific examination of some of our shell marls. They had not at that time, he stated, been subjected to any chemical analysis. That friend in the intervening period has passed from our midst, but I have recently redeemed my promise. It is a striking circumstance in the events of life, that I have to record not only the death of Prof. Fox to whom the promise was made, but also that of Judge Buckland, of Howell, from whose farm the marl examined was obtained, and upon whose concurrent solicitation the examination was undertaken.

The last of those great natural changes which have conspired to make the face of the lower peninsula of Michigan what it is, left a broken and undulating surface of country. Immense piles and ridges of boulders, pebbles, sand and clay seem to have been spread promiscuously over the pre-existing surface. The disposition of these loose materials, termed drift left innumerable depressions and hollows in the surface which subsequently became filled with water. Thus the lakes and ponds were formed. These then became the abodes of innumerable aquatic animals and plants. How many successive generations lived and perished in these waters and about their shores it is impossible to say. But in the course of ages the debris of animal and vegetable life began to create sensible accumulations upon the bottoms and margins of these lakes. Plants grew up and perished. The materials which had nourished and formed them, derived partly from the air, partly from the water and partly from the earth, were deposited in the common bed, which thus gradually increased. Fish and reptiles mingled their remains with those of their congeners. But especially the tribes of shell fish or molluscous animals contributed their hard and calcareous coverings to the general accumulation.

By degrees the lakes were filled up. The prevalence of strong westerly winds drifted these effete materials to the leeward shores, where the accumulations were much the most rapid. On those shores the water became at first shallow, and furnished a habitat for numerous additional species of plants. Then the water became too shallow to be much frequented by aquatic animals, and became a marsh As animal remains diminished in quantity vegetable remains increased. Finally vegetable life acquired undisputed possession, and since that time unnumbered generations of plants have flourished and decayed above those ancient depositories of the common tenants of the waters. In the mean time the process of encroachment upon the waters from the leeward shores has been continued. At the bottom lie mostly shells and animal remains, because these deposites were formed mainly while the water prevailed—upon these lies a mixture of debris from both kingdoms, deposited while the spot was a submerged marsh—and above the whole rests a bed of dark brown vegetable matter in which the stems and roots of ancient plants can be distinctly traced. In many instances these accumulations have supplanted the entire waters of a lake, and nothing remains but a swamp, a marsh, a swale, or in some cases dry and beautiful meadow lands. In other instances the encroachment has created a swamp on the east or southeast, faced by a lake on the west or northwest. In the natural course of events these lakes will all become marshes, and the marshes dry and valuable land.

The first deposites from the tenants of these lakes formed the marl beds of the State—the subsequent ones from aquatic and marsh plants constitute the peat beds which almost everywhere overlie the marl.

The marl is composed mainly of comminuted shells. Many unbroken specimens of minute size may however be picked out. In the neighborhood of the transition line between the marl and peat the perfect shells are of larger size and more abundant. In the lower portion of the peat they constitute a large per centage. These shells are an abundant source of carbonate of lime. They belong mostly or entirely to species still existing in the adjacent waters.

The marl is a genuine shell marl, and exceedingly valuable as a fertilizer. The peat is of a spurious kind, but when judiciously employed its abundance of vegetable matter will render it a mine of wealth to the agricultural interests of the State. / Nothing could be better adapted to utilize these immense deposites of vegetable matter than the equally immense deposites of calcareous matter which lie in such intimate proximity beneath them. But it is not my purpose at present to speak of the manner in which this may be done.

The deposite of marl from which the specimen subjected to examination was taken, underlies a wet piece of meadow land on the farm of the late Judge Buckland, on the north side of the highway, between his late residence and the village of Howell. It was collected in July of last year, in localities where it had been thrown up in ditching.

1. PHYSICAL PROPERTIES.

The marl, when dry, is light, porous and chalky—has a whitish gray color—is intersected by numerous vegetable fibers—is seen to pass by a rapid though not sudden transition into the peat above—and it is interspersed with the shells of small fresh-water molluscs of the genera *Planorbis*, *Physa*, *Cyclas* and *Lymnea*.

A specimen of the marl was finely granulated, and .525 per cent. of perfect shells was carefully picked out. The marl was then pulverized and passed through a seive counting 42 meshes to the linear inch, by which 1.099 per cent of coarser vegetable fibers was separated. The sifted marl was passed through a finer seive containing 100 meshes to the linear inch, by which an impalpable powder was obtained, which was made the subject of the further experiments.

A portion of the pulverulent marl was carefully dried at a temperature which did not destroy the vegetable matter, and placed aside to absorb moisture. In 14 hours it had absorbed 1.642 per cent. In ten days it had absorbed 2.527 per cent. Water was allowed to drop upon a portion of unsifted marl thoroughly dried, until it became perfectly saturated, when it was found to hold in suspension 111.419 per cent.

The specific gravity of the absolutely dry marl is 1.655. Hence if it were not porous the weight of a cubic foot would be 103.44 lbs.

In its saturated porous state a cubic foot weighs,
perfectly dried,.....14.635 lbs.
When simply air dried it weighs.....15.005 "
When saturated with water.....30.941 "

The foregoing experiments were undertaken with a view to determine what physical properties would be introduced into a soil by the application of this marl.

2. CHEMICAL CONSTITUTION.

A weighed portion of the sifted and thoroughly dried marl was subjected for some time to a red heat. The total amount of vegetable and other volatile matters expelled was 29.03 per cent.

Another portion was boiled for some minutes in distilled water. The solution obtained had a bright buff color. It was carefully evaporated to dryness over a water bath and the residue weighed 1.3342 per cent.

The undistilled portion of the boiled marl was now heated with hydrochloric acid, which dissolved 30.6755 per cent. of the original portion.

During the reaction a distinct smell of *sulphuretted hydrogen* was perceived.

The residue still undissolved constituted .2345 per cent., and was regarded as *silica* and *silicates*.

Each of the above products was further carefully analyzed by methods which it is unnecessary here to detail. The amount of *carbonic acid* was ascertained from several trials to be 37.824 per cent. The result of the whole is given below.

One hundred parts, by weight, contain

I. VEGETABLE MATTER:

Humic Acid	1.2940	
Humus	.7260	
Other volatile matter	27.0100	
Total,		29.0300

II. AQUEOUS EXTRACT:

Lime	1.2440	
Magnesia	.0900	
Potash and Soda	.0002	
Chlorine, Phosphoric Acid	traces	
Total,		1.3342

III. CARBONIC ACID: 37.8240

IV. HYDROCHLORIC EXTRACT:

Lime	27.6920	
Oxyde of Iron	.1505	
Protoxyd of Manganesa	.0165	
Phosphates of Iron and Alumina,	traces	
Magnesia	2.2783	
Potash	.1164	
Soda	.4218	
Total,		30.6755

V. SILICATES AND SILICA:

Protoxyd of Iron	.0937	
Lime	.0063	
Magnesia	.0001	
Silica	.1344	
Total,		.2345
Loss,		.9018
		100.0000

The above constituents were probably combined in such a manner as to form 51.7 per cent. of *carbonate of lime*, 4.9 per cent. *carbonate of magnesia*, and 0.2 per cent *silicate of iron*, besides potash, soda and the other ingredients.

It seems quite likely that some *ammonia* escaped with the large amount of volatile ingredients, though the test employed did not reveal the presence of that valuable alkali. Shier states that the *humic* and *lumic acids* are almost sure to contain ammonia. The amount of *carbonic acid* present is more than sufficient to neutralize the saline losses discovered. This gas, whether free or combined exerts a favorable influence upon the roots of plants. The traces of *phosphoric acid* were exceedingly distinct, but the quantities obtained were inappreciable, being less than the tenth of a millegramme in the sample analyzed. Prof. Fox expressed the opinion that the Michigan marls would be found rich in *ammonia* and *phosphoric acid* (Fox's Agricultural Text Book, page 332.) The *potash* and *soda* constitute considerable and valuable proportions.

The following table presents in another form the relative quantities of the most important ingredients.

One ton (2000lbs.) of fine marl, perfectly dry

Will weigh	When simply air dried	2050.4
	When saturated with water	4228.4
Contained originally	Small shells not much broken	10.7
	Coarse vegetable fibers	22.3
	Soluble in water	26.7
	Humic and Ulmic Acid	25.9
	Humus and Ulmin	14.5
Chem. Constitution	Other vegetable and volatile matters	540.2
	Carbonate of Lime	1035.2
	Carbonate of Magnesia	97.8
	Carbonic Acid	251.6
	Potash	2.3
	Soda	8.4
	Silicates	4.7

After the above exhibition of the constitution of our Michigan marls, it is superfluous to add that they possess very great fertilizing capabilities. Could they be drawn out of the sloughs in which they are buried, and spread over the gravelly and exhausted hill sides, there would be little need of resorting to the alluvial bottoms of the western rivers to witness the highest possible development of the cereal crops. I am not informed of the results of experiments in the use of our marls, and should be gratified to receive any reliable information on that point.

Remarkable Yield of Wheat.

EDITOR FARMER, SIR:—I send you the product of four kernels of wheat; if any one can beat it I would like to hear from them. About one month ago, I was passing along by my wheat field and I saw where it was finished being cultivated in, the cultivator was drawn off from the piece sown to wheat, on to a piece which was not sown, and drew a few kernels with it which produced a few scattering stools. My attention was drawn to them by their being so large, so I examined one of them and was satisfied that it was the product of one kernel. I counted the straws and found them to be forty-nine, and concluded when they were ripe I would examine them further. So when I was harvesting by them, I pulled up four stools and brought them to the house for examination. The result was, the first stool had forty-three straws, two of the straws had dead heads that had no kernels in them; the others I shelled and counted the kernels which numbered 1325. The next stool had 56 straws and 1951 kernels; the third one had 56 straws, the fourth one 37 straws; the two last are not shelled, but have large heads and well filled, and I have them on hand if any wishes to see them. H. H. ALLEN.

Paris, Kent Co. Mich., July 25, 1855.

HOOSIER WHEAT IN A SUCKER'S EYE.—A Chicago editor speaks of having seen white flint wheat raised ndiana, the kernels of which resembled peas in size.

The Chess Question.

Letters and communications on the above subject have been pouring in upon us so continuously for the past few months that we have found it impossible to publish all as they came and at the same time leave room for our usual variety, and the discussion of subjects connected with the seasons; consequently a large number have accumulated on our hands—enough, if all were published as they are written, to fill more than half the pages of the Farmer, and even then we doubt whether all the arguments, made use of on either side would change the preconceived opinions of a single reader. However, we wish to do justice to all; to give all a fair hearing, and for this purpose propose to arrange the disputants in their respective classes for and against transmutation, and, according to Republican usages, give precedence to the majority. Every one is aware that in controversies of this kind, whole pages are often written that have in reality no practical bearing on the merits of the question; others are so near alike in sentiment and expression that to publish both would be but a repetition of words and waste of room; while others still, like the question they intend to argue, too often run from wheat to "cheat"—from sound sense and argument to trifling personalities, of which too many have already found their way into print.

From the letterr before us, of which there are upwards of twenty, and some of them very long ones, we shall take the liberty of selecting only such parts as set forth the writer's views in the strongest light, with such illustrations as they have furnished to substantiate their belief, and shall, as far as they have been given to us, give the name and place of residence of each as he appears. This arrangement is the best we are able to make, and we hope the *authors* will be satisfied with this disposal of their letters. A large majority being in favor of transmutation, we shall commence with them, giving each as nearly as possible in the order they were received, according to date.

H. H. Allen, of Paris, Kent county, writes;—"I agree with Mr. Shaw and Mr. Corbin. Some years ago, I sowed a piece of ground to wheat the second time, that is, wheat after wheat. The stubble was plowed in, then harrowed and sowed. There were some two or three acres of rather bottom land on it that produced good wheat that year, but the scatterings came up so well and looked so nice, I concluded not to sow it over, but let it stand, and the result was, that there was a heavy crop of chess but very little wheat."

Silvester M. Pitt, of Hartford, Van Buren county, says;— "About thirty years ago, my father settled on one of the flat clay farms of Niagara county, N. Y., and commenced clearing, and trying to raise the "staff of life." For several years he raised about five bushels of chess to one of wheat. He became discouraged and turned his attention to other crops. About that time there was much said in favor of "swamp wheat," which, it was said, would grow as well under water as other wheat would on dry land. This raised our courage; at it we went, and cleared six acres of swamp for the new wheat. The soil being muck, and the time of burning very dry, the surface was burned perfectly all over, so as to kill all kinds of seeds there on. We could get only three bushels of the swamp wheat and that was very clean. We then procured three bushels of the large white flint variety, very clean also. With these six bushels of extra clean seed we sowed the fallow. The fall being favorable, the wheat grew finely until it was covered with water by the fall rains. In the spring the wheat was looked after with intense anxiety. The top, which in the fall was very large and fine, was now a perfect rotten sheet, and all our hopes fled. We talked of dragging in oats as on our former failures; but before the ground was dry enough for that, there appeared new life at the roots of our wheat and we concluded to await the result. And the result was this. At haying time there was the most splendid field of chess I ever saw; not a head of wheat appeared except on some small cradle knolls. We mowed and made the chess as hay, and had from those six acres, seven large loads of very good fodder.

Now, I would ask unbelievers in transmutation, if that did not grow from the roots of the wheat which started to grow on the field, where did it come from? There had not been a seed of any other kind sown there, and the surface was so thoroughly burned that there was not a weed of any kind, or even chess, growing in the fence corners where wheat had not been sown. I certify the above to be facts, and can prove the same by some half a dozen living witnesses.

The next letter upon the list is dated at Newton, and signed R. A. It is simply a recipe for raising chess, for the benefit of our correspondent who desires to be informed of the process. He says:—"Take a piece of wheat that had no chess sown with it, and be sure there was none on the ground; then when the ground is soft, before the wheat has grown much, say in March or April, turn upon it a parcel of colts or cattle, and let them give it a thorough trampling, so as to injure, but not kill the roots. The result will be a crop of shriveled, imperfect grain, which is called chess. If your correspondent will give that a fair trial, I think he will be well satisfied, not that wheat will change into another distinct kind of grain, but that when the operations of Nature are disturbed, she will repair the injury the best way she can. So with animals; they will not produce a different species, but chessy specimens are too often found among our domestic flocks and herds."

Another, writing from Green Oak, over the signature of M. M. R., says:—"It is highly important for

us farmers to know whether we harvest such as we sow, Is the chess we find intermixed with our wheat, especially on low ground, produced by the wheat itself, or is it the work of an enemy? I contend that chess is the natural production of wheat when winter killed or affected by wet weather; and to prove this, I will state an experiment of my own which will be certified to by a number of witnesses. I selected ten large, plump grains of blue-stem wheat, and sowed it in low sandy loam, on the 15th day of September. The wheat came up; it grew large. The winter proved very open and wheat in general was injured by the ice. In the spring I thought my wheat was all killed, bu when warm weather came on, it started and stooled out, and from the ten grains of wheat that I planted I gathered seventeen full heads of wheat, six good heads of chess, and one stem, the lower end of which was wheat and the upper end was chess. This can be certified to by a number of witnesses, and if Mr Wm. B. Sprague, or any one else, can show any reason why the nature of wheat cannot be destroyed, and generate the substitute we term chess,he will oblige a friend who is desirous of gaining all the information possible from the pens of more able writers. The only sure method of gaining information consists in experiment and observation of nature, and not in mere opinion or conjecture. We so often meet with instances that induce us to believe that wheat, under certain circumstances, will turn to chess, that I can no longer find any room for a doubt, but do as sincerely believe it as I do my own existence."

H. Snyde,r of Conway, writes:—"I think a pilgrimage to Mr. Markham's place unnecessary. If he can convince us that wheat does not turn to chess, he can do it as well by writing as any other way. I have a timbered farm. There is a 4 acre lot that I sowed in 1852. Across this lot there is a strip which is wet, say 4 by 18 rods, but it was all plowed at one time, all sowed at one time, and all done alike. Now all, except this strip running through it, produced good wheat, almost entirely free from chess, whilst that grown upon the strip was nine tenths chess. I cut the chess separate myself, and had thirteen bushels. You may say that I sowed chess. If I did I sowed all the lot alike. Off from that same piece I took my seed and sowed 5 acres in 1853, without cleaning through a mill of any kind, and harvested 120 bushels. Last year I sowed the first piece again, after corn; the result is about the same as before. Now if Mr. Markham can convince me and my neighbors that this chess did not grow from wheat, he will confer a favor."

J. A. Galloway, of Hillsdale says:—"Last September, good clean seed wheat was sown in this vicinity, on new ground, cleared and prepared during the previous summer. Soon after it came up the insect took possession of it, and they attacked it again last spring. The result is about one third matured wheat, and the remaining two thirds matured chess. It would be very gratifying to many others as well as myself, if Mr. Markham would account for the fact, and tell us where the chess came from.

I will, if you please, make a proposition to him through the *Farmer*. I will agree with him upon any five gentlemen,or any other number he may choose, residing in Southern Michigan, to whom we will submit the matter, and they, or a majority of them shall decide; judging from the evidence I will submit to them that wheat will produce chess. Then I shall be at liberty to claim the amount offered by Mr. M. in the December number of the *Farmer*; saying nothing about his pigs from sheep, and puppies from swine."

Next on the list we have a very long review of Mr. Markham's "position in a field of chess," from the pen of Wm.O. Houghtaling,of Grand Rapids. To publish it entire would be crowding too much upon room equally claimed by others. He simply claims that Mr. Markham errs in asserting that Nature is never forced out of her beaten track to deviate from a general rule, and says that "such circumstances are well authenticated facts of history, specimens of which, were it not for the merciful hand of the destroyer, might be found all over the country, as living and breathing curiosities and monuments of the truth of the statement that Nature does turn aside from following a general rule, and that under certain peculiar circumstances and influences, unseen by the human eye, and lying beyond man's power of investigation, certain causes produce certain effects, even to the transmutation of wheat to chess." Mr. H. thinks that finding the skin of a certain seed at the root of any plant is evidence only in that particular instance, and no proof that because chess grew from chess in one case, it must necessarily do so in every instance. He says: "It is not denied that chess will produce chess, but it is affirmed that chess will sometimes grow from wheat, evidences of which have been published that must satisfy the candid, and set the sceptical to thinking, that they might reason away the irresistible conclusion in view of the circumstances that such was the fact. Evidences have been multiplied and published in the *Farmer* that ought to convince any man "*that is a man*" and silence his cavils until he could produce a more legitimate reason for disbelieving the facts presented The demonstration of Mr. Corbin in the last December number is proof such as would be received in any court of justice, as full and conclusive that wheat *did*, in that instance, turn to chess. I will give a statement that I have often heard my father make of what he found in his wheat field, the summer I was sixteen years old, on his farm in Green Oak, Livingston county, in this State. He said he found what was apparently a stool of wheat and chess,a number of straws and heads of each, growing together, and he pulled it up and examined it closely and care-

fully, and could not separate the wheat from the chess without breaking the roots. He was satisfied that they grew from the same seed. Now my father, Mr. Garret Houghtaling was his name when living, was a man whose candor and veracity were never questioned. Mr. Markham himself will not do it, as he was personally known to him. Such are the plain positive evidences that chess does sometimes grow from wheat and yet Mr. M. would annihilate them all with one stroke of his pen by declaring them "mere assertions," "false and ridiculous." If this is candor, I know nothing about it.

In addition to the above I would like to mention an incident that I heard related a few years since, by a man whose honesty I had no earthly reason to doubt. He said that when he was a young man at home, he once had occasion to throw down the fence and ride across his father's wheat field in a great hurry. It was in spring when the ground was soft, and he put his horse through, as he thought the quicker he got across it the better. The ground and wheat were pretty badly cut up where he went. Well, when it came to harvest time, the wheat was good and clean, and no chess to be seen, scarcely, except just in the track which he made with his horse, and there was plenty of chess the whole length of the field. How it came to be there and no where else, no one could tell, unless the breaking of the wheat roots caused it to turn to chess. Such facts as the above are constantly transpiring all over the country, whether Mr. M. sees them or not."

A writer signing himself "Straws," of Elkhart, Ind. says: "I stated one fact in my communication published in the *Farmer* for August 1853, to which Mr. Markham has never offered any explanation, and for the very good reason that he cannot account for the chess only as I did. That chess skins can be found attached to the roots of chess in every instance is "mere assertion," and *not true*. A few weeks ago I was walking through one of my clover fields from which I took a crop of white wheat last year. I was in company with a man, "I mean *a man*, a wayfairing man who bears the appellation which the scriptures attach to him," we came to a spot of chess. I pulled a large thrifty bunch and found—not chess skins, but the skins, chaff and beard of a head of white wheat firmly entwined by, and attached to the roots. This fact can be attested. If chess only grew from chess, why does Mr. Markham raise any It is so easy for a man "who is a man," to have his seed perfectly clean. Mr. Markham admits that wheat can be changed by cultivation. Chess is only an inferior kind of wheat, which cannot easily be distinguished from the genuine untill the head appears. Those who sow wheat do not always reap the same; sometimes they reap smut, sometimes ergot, sometimes chess, and sometimes do not reap at all, as was the case near Middleburry in this county three or four years ago when wheat produced no heads."

The remainder of the letter of our friend "Straws" relates mostly to "partial abortions" and personal matters rather foreign to the point to be decided. It is too long to give entire, while so many others are waiting for room.

J. V. D., of Tecumseh, writes, "I once saw a head of wheat and a head of chess produced by the same stalk. I think it was in '34. The stalk was examined by the men who were harvesting in the field, and then it was thrown down upon the ground. Perhaps no one supposed the chess question would assume the importance it now seems to possess, or come before the public in its present form and aspect.

I wish to ask one question in reference to the subject. How do the anti-chess growers know that the seed which produces chess has lain in the ground for years?

"W. A." of Ann Arbor, makes the following sensible proposition. "In order to put this vexed chess question at rest, allow me respectfully to suggest to unbelievers in transmutation of wheat to chess, to offer premiums to any one who will produce chess from wheat. Now gentlemen, make a good purse to induce some ingenious Yankee to try his hand at it and have the matter settled in one way or another by next harvest. Meanwhile let the matter rest till that time. Now gentlemen, back up your opinions, by offering premiums through the *Farmer*, to any one who will produce chess from wheat, accompanied with proper proof, name the conditions and the sum. Only a few lines will be required the object. If any better plan than the above can be proposed, let it be done. I am well aware that nature, or the season will sometimes produce chess from wheat, but whether it can be done by art is a question yet to be settled."

Wm. Minor, of Battle Creek, says in reference to Mr. Markham's challenge in the July number "I have seen a chess stem grow out of a wheat head, and a number of fibers with the perfect chess grain on them. Now I should like to ask the writer of that challenge, who is so confident that the skin of the seed may be found like that in kind produced, how he will dispose of that?"

C. Babcock, of Troy, writing under date of August 3d, says: "While sitting on a sheaf of wheat in my field one day last week, I picked up a bastard head of wheat and shelled it in my hand. I blew the chaff out and saw that it looked like cheat. I called my boy who was standing near, and asked him what that was. He said at once that it was chess. Will Mr. Markham tell me what seed that came from?"

Mr. John Stretch, of Raisin, gives the following testimony: "Some years ago when I lived in the town of Williamson, 12 miles north of Palmyra in the State of New York, I put in 20 acres of wheat. The

ground was all summer-fallowed; ten acres were old, and ten new land. I put it in in good season, sowed entirely clean seed for which I paid 12 cents per bushel more than market price to have it clean—not a kerne of chess in it. The winter proved severe, the new ground lay to the east, the snow lay upon some of it till the 20th of April. Those places that were covered with snow so late were all chess; the wheat turned out but 162 bushels; it was thought in the fall I should get 600 bushels. I had 36 bushels of chess which I measured, and probably 15 more in the wheat. Now I wish Mr. Markham to tell me where the chess came from, as there was not a grain sowed, and the land was new and clean."

Some one who does not give his name sends the following question from Middletown.

1st. Why will the wheat crop be comparatively free from chess for one, two or three years, and perhaps the next be from one tenth to one third chess?

5d. Why will a piece of new land produce on the low moist parts, from one third, to one half chess, while the more elevated portions are comparatively free from it?

3d. Why is it, as is often the case where the grain is suffered to remain until it is very ripe before cutting, that the field, if not plowed nor pastured the following summer, will produce a heavy crop of chess with scarcely a head of wheat?

4th. Why is it, that one part of a field, prepared all alike, and sown with the same quality of seed will be more foul with chess than the other, as frequently occurs where there is a week or ten days difference in the sowing?

We intended to have given both sides of the chess question this month and then make a finish of the matter for the present, but we find the extracts already given from one side alone have grown to such a length that we shall be crowded for room and be obliged to leave out articles of more immediate interest.

We have a number of letters advocating the opposite side of the question, but shall be forced to leave them over till another month.

Salt for Cut Worms.

J. J. Thomas, says, "cabbage plants were encircled a few inches from the stem, with a ring of salt about an inch wide, and a quarter of an inch thick, in other cases the salt was thickly strewed about them, and in contact with the stems. In neither case, the cut-worms paid the least attention to the salt, but walked right through it, and destroyed the plants"

If salt is obnoxious to the cut-worm, it can only be so in a dissolved state, that is, if we suppose cut worms to infest our soil, the salt should be sown on and left for the rains to dissolve it. This *solution* coming in contact with the bodies of such soft-skinned insects, causes irritation, and they seek other quarters. B.

On Sowing Wheat.

"How ceaseless is the round of rural labors."

The produce of one years' seeding is scarce secured ere the prudent farmer is again busy, preparing his land for another reception of the golden grain; for if he sows not how can he expect to reap? If ever there is life and animation upon the farm, it is at seeding time, in autumn. The summer fallow is to be plowed; the corn cut up and stooked; the potatoes dug; men and teams are out at dawn, and fatigued return at dark. The men being thus severely tasked, Biddy, or Kitty, or Dorothy sees plainly her duty, and with a milk-pail upon each arm and a lively step, awakes the evening echoes as she sings—

"Kitty she is the charming girl
Who carries the milking pail."

Ripe and luscious fruits load the tables, and there is not a more joyous season than this throughout the year.

Though the harvest just passed has been, in portions of the country, a rather discouraging one in some respects, yet there is good ground to hope for better things another year. The extreme wetness of the season may be reckoned as an advantage over the Hessian fly, which during its late transformation, has no doubt been destroyed in great numbers. The drouth of last year, with the frequent and violent rains the present, have so fully unlocked the mineral treasures of the earth, so crumbled the flinty particles of the soil into dust, that they will be easily dissolved by the falling rains and freely taken up by the future crops. We may therefore calculate upon an abundant yield from all good wheat lands. We would advise sowing as great a breadth of land as can be got in in good order. The war in Europe, scarce yet begun, will make a market for all the surplus we can possibly raise to spare abroad.

The *Mediterranean* wheat, a variety now well known, has completely escaped the fly. and those who are fearing a return of this insect would do well to secure seed of this kind. Mr. A. Y. Moore has raised it for a number of years and thinks highly of it. It makes bread white enough, he says, and the price beside the white wheats in market, is but a trifle less. Mr. Moore's crop was all engaged for seed, some time ago. This variety is grown to a large extent upon *La Porte prairie*, Ind., where seed probably may be obtained.

Late sowing of the white wheats is security against the fly in the fall, as is proved by Mr. Cone's practice, which is to wait until after one or two sharp frosts occur. Really there is no loss, even in time, by this delay, for so much more time is allowed to prepare the soil in the very best manner; and when the seed is put in, it grows most vigorously and shows as good a stand upon the ground at winter, as that earlier sown

upon a more hastily prepared seed-bed. It must be evident enough to all observers, that as a general rule, strong, fast growing plants, are those which the fly does not attack; while the weak and slow-growing —such as come up in and on the sides of dead-furrows—are chiefly liable and are taken first.

It would seem that this fact teaches a lesson which need not be lost upon us. It may be that when the art of culture comes to be established upon a better system than our present, random one,—when we shall not dwarf our crops by withholding a full supply of proper aliment,—it may be that insects will no more infest our fields, and we shall look upon their past attentions as peculiar favors.

The soil for wheat must be deep, mellow and dry, to start with; these qualities secured, the chances of success are not against you, but for you. We see autumn after autumn, an incalculable amount of labor and time wasted, by putting in this great crop in bad order. Good drainage is one of the first requisites in growing wheat. A soil which heaves. (and a wet soil always will,) is unfit for wheat; by heaving, the roots are thrown up and when the land subsides they are broken and the plant perishes. This is *winter killing*, which on dry soils is an unknown casualty. Another evil avoided by good drainage is rust, which often ruins the crop on wet lands.

We are wholly in favor of drilling in wheat as by far the best method ever devised for covering *all* the seed and at a uniform depth. True, every farmer may not feel able to buy a drill, but several neighbors may join and purchase together, as 500 acres may be sown in a short time, with a good nine tooth drill. When covering wheat by the usual methods, an excellent hint is given by Mr. Cone, to pass the last time in a direction *crossing* the course of the prevailing winds. The ground during winter is often bare of snow for weeks, and by having the winds blow *across* the ridges, and filling up the hollows, the roots of the wheat are covered deeper and protected; but if the last turn of the harrow or cultivator be *with* the winds, the roots are liable to be laid bare all along the ridges, and of course, in such an event, are more or less injured.

Sowing sprouted wheat.—We have heard various fears expressed, that the sprouted wheat will not germinate. There need be no anxiety on that point; it will grow as freely and surely as any wheat, *provided* it has not *heated* in the bins after threshing. Any one however may convince himself in 48 hours by soaking a handful in moist earth, kept warm.

B.

☞ The people of Ontario and Seneca counties are agitating the subject of locating an Agricultural College in that section of the Empire State.

Rotation of Crops.

We farm it here in the west, altogether too much at random. Wheat is put upon this field, and corn upon that, oats upon another, and so on, without a philosophical reason ever being asked therefor. To be sure, every one knows that constant cropping will impoverish the land,—that if he sows wheat after wheat upon any one field for several years in succession, without manure, he will get a constantly diminishing product, till finally the yield will not pay the rent of the land. But why is this so? Simply, because some one or more ingredients which the crops derived from the soil, has been gradually extracted by the roots, and carried off in the grain, until there is not enough left in a soluble state to supply the wants of this particular plant. As a consequence it fails to grow. Very simple indeed.

But though this field will not produce wheat profitably, yet oats, potatoes or grass, will flourish exuberantly. Thus it is a fortunate circumstance for us that when a field becomes exhausted of one particular class of substances, it will be sure to bring good crops of grain or of roots which require a different class for their development. It is this beautiful provision of nature which furnishes the foundation for all correct rotations. Nature herself ever observes it in the re-production of her forests.

Our common crops may be divided into classes, according to the mineral elements they are found to contain. (And here one particular fact is worthy of notice; that while phosphoric acid is the leading ingredient in all the grains, it is least abundant in all soils. Hence the rapid exhaustion of most soils when constantly cropped with grain.) "There are three great leading classes of each established: 1. The grains where phosphoric acid predominates; 2. The roots where potash and soda abound; 3. The grasses where lime becomes quite important; 4. The various kinds of straw, may perhaps be said to constitute a fourth class, where silica is from one half to two-thirds of the whole weight."—*Norton's Essay.*

From the considerations and facts above given, a correct, or at least a good system of rotation may be laid down. Though we may be safe in the practice of following one grain crop with another, the grass and roots should be made to alternate as often as possible. "But suppose I turn under a clover lea for wheat, and it is my purpose to plant to corn the next spring after the wheat comes off, will it "*pay*" to seed upon the wheat?

Most assuredly it will. The fall feed which the clover affords will pay for seed, besides it will keep down an unsightly growth of noxious weeds.

Every farmer must fix upon a rotation suited to his soil, his tastes and circumstances. *Laboratory* rotations, which some chemists have organized and

sent out are very useless things. Not one farmer in five hundred finds them practicable. We hope to see more attention given to this subject among farmers, for it is a very important one.—B.

Rambles.

The farm of Mr. D. O. Woodruff, of Niles, is situated a little south of west of the village on the table-land, west of the St. Joseph river; his farm consists of nearly two hundred acres, and like many of the farms in the neighborhood of Niles is of superior quality, and under a high state of cultivation. Mr. Woodruff has refused one hundred and ten dollars an acre, for eighty-five acres, on which is situated his dwelling and farm buildings, with all the fixings necessary for a well calculated farm house. The barn with its appendages are adapted for economy and convenience in taking care of stock, of which he has several fine Devons, and Durhams, and their crosses in fine order. The fruit yard and orchard has a good variety of choice fruit.

The front yard is ornamented with a good selection of trees and shrubery. And what adds beauty to utility, and both finely blended, is the fountain in the front door yard. The jet is about ten feet high, the water falling into a circular fount, or reservoir, about fifteen feet in diameter and two feet deep. The water is conveyed from a spring on the farm a distance of nearly one hundred rods, in a half inch pipe; and it can be raised to the top of the chimneys and every room furnished with water. The arrangement of the pipes is such at the fount that the water is conveyed to the barn for the stock, to the kitchen for culinary purposes, or permitted to pass through the jet at pleasure. A water pipe at the cistern is so arranged that it can be let off at any time to irrigate the garden or adjoining land. It is really well designed to raise the ideas of the hypochondriac to visit such a jet on a sultry, muggy day and if not disposed to submerge himself in the cistern he might at least enjoy the benefit of lying upon the green turf and look at the water as it falls from the jet, and inhale the fragrance of strawberries, when in time, from a large plat of very luxuriant growth adjoining the yard. Mr. Woodruff is just the man to design and perfect such an establishment for his own gratification and profit, and for the admiration of any one who is disposed to enjoy his hospitality. After rambling over the farm, Mr. W. conveyed us to the village, we intend at some future time to make him a more protracted visit.

We always liked a good vegetable garden in communication with a fruit yard, and just such an one we found at the residence of Capt. H. Coolidge, of Niles. The garden plat is large and highly cultivated, in which is finely mixed up the useful with the ornamental. Weeds find no place in the Captain's garden, his vegetables are large and in the most flourishing condition of any garden that we have visited; the fruit trees are, many of them, large and heavily laden with fruit; he has one standard pear tree of eighteen years growth; the tree yielded pears in 1853, which he sold for $20; he has other standard and dwarfs.—The Capt. is an amateur cultivator of gooseberries, he has now many standard bushes, and the ensuing fall he is intending to set out two hundred and forty more, the berries are large, green, and smooth, and do not mildew. The success of the Capt. in the cultivation of vegetables and fruit, depends much upon high manuring; he has a piggery in which are noble specimens of the porker race, the Leicestershire and grass breeds crossed. The breeders are large and well propotioned, and now have a *large* litter of *large* pigs; into the yard connected with the pig pen is thrown every substance that will make manure; after being thoroughly incorporated with the offal it is wheeled to the garden, and the way the vegetables grow is only to be seen to be admired.

Capt. Coolidge informs us that he is an old resident of Niles, having disposed of his farm and purchased a residence in the village. That he was an early subscriber to the *Michigan Farmer*, and helped hold it up in its boyhood, and that it has now become an indespensable article to him.

We next located ourself upon the farm of Mr. C. L. Tucker, of Decatur, and took a view of a one hundred and fifty acres of marsh which he is now draining, with a ditch one mile and a half in length, including the cross ditches; three-fourths of a mile of the ditch is now completed, the water running into a Lake. The ditch is five and a half feet in width at top and three and a half feet deep with slanting banks, the meadow has been seeded with foul medow grass, a part of which took well, and Mr. T. intends having the best meadow in Michigan. Mr. T. has been experimenting for several years with potatoes, and thinks he has discovered the best way to raise them. He never has any rotten ones, and has a yield of from one hundred and fifty to two hundred bushels per acre, on what we judge rather light sandy soil, he plants in drills three feet apart and puts a cutting containing from two to four eyes to a hill, twelve inches apart, never planting without cutting, and plants only ripe potatoes. Four bushels plant an acre. He has formed the opinion that the great difficulty in raising good potatoes, originated by planting unripe tubers. Mr. T. has now twelve acres planted in this way—which look well, he is trying this season some six or eight varieties, of one variety he showed us small potatoes from the hills which had been planted only six weeks.

We found our old friend, A. F. Moon, at Paw Paw, as usual busily engaged in his apiary and poultry yard. He is raising some fine birds, so look out for some

fine Bramas a the next Fair; he is extending his bee operations, and is about to build an extensive bee-house upon a new principle with a newly constructed hive.

At Kalamazoo we visited the bee-house of J. L. Reed. The house is calculated to hold sixty-four hives all of which are separate and distinct families, placed so near together that they can be neighborly, and even work together. They can be perfectly controlled by the apirian and may be permitted to swarm, or be divided without swarming. Mr Henry, at Kalamazoo, and some others have smaller houses. Mr. S. P. Wormly, at Marshal, has a house for twelve hives. Mr. L. W. Bodwell, at Ann Arbor, and others are also building bee-houses.

My friend D. Cook, of Jackson has been experimenting and studying the habits of the apple-worm, which to him has done more injury than common.—We hope he will give through the *Farmer* a statement of some of his investigations for the benefit of others.—N.

A Patent Office Grass with Sundry Queries.

Mr. Editor:—*Dear Sir:*—I will improve a rainy day and a leisure hour by making a few remarks and asking a few questions. Through the kindness of Gen. Stevens I have been favored with the Report of the Patent Office on Agriculture. These reports, though not as full and specific on many subjects as could be wished, are yet worth their weight in gold There seems too great a variation in the estimates of the cost of raising grain, grass and stock in the same sections of country. Michigan is hardly reported. I am sorry our farmers have not spoken more fully, especially from "Old Oakland." Now for the questions On page 212 Mr. Iverson reports a species of grass "*Ceratochloa breviaristata.*," on which he kept a large stock through the winter and spring till June; then cut from four to six tons of nutritious hay per acre; no frost, however severe, hurts it, and it will yield 100 bushels of seed to the acre, as nutritious as barley, and nearly as large as wheat. Now, sir, has it been tried in Michigan, or is there any seed to be had nearer than Geoegia? For if it will do one half what he reports, it will outdo any grass I know of. Is he not mistaken in the name? Is it not a species of the "Gramma," on page 377, "*Chondrosum?*" I would also refer to the improved King Philip corn, a sample of which was sent to me last spring. Although it was not equal to Mr. Brown's report, it did very well for this season, ripening within twelve weeks from planting. Any one who wishes to assist in testing it and spreading it, can have a share. I do not believe in "high tariff" on new varieties of grain or stock. I think if we would take more pains to improve what is called native stock, there would be less need of importations, and we should have a hardy and superior bread already acclimated.

Is Mr. Gage's drill a patent or not? If not, will he please give a plan of his seed box?

Is there any thing more known of the Alsyke clover, or where can the seed be got? What is the difference between white flint, white flint Soules, and crystal flint wheat? Is not chess (or cheat) like white clover, and sorrel, indigenous in many soils, and is not June, or wire grass, a dwarf species of chess?

In conclusion I will give you a description of a seedling peach tree. When it was eight years old last June, it had the seventh crop upon it. It is over seven inches in diameter, nearly twenty feet high, has a good top, and the fruit is late but good. When you visit this part of old Oakland, you shall be welcome to a sight and some fruit too, if it is ripe. I have several varieties of yellow seedling peaches, all first rate.

A little more room on my sheet—all eyes open, and we will look at the new grass (or chess) again. Well 100 acres, at 5 tons of hay per acre, and $10 per ton, $5,000,000 and 100 bushels of seed to the acre at only $5 00 a peck, $200,000,000! It leaves Morus Multicaulis, Hen fever, Copper stock, Gold mines, all in the shade; raising cotton and niggers "no whar!" Surely the Southerners got the steam up this time!

T. J. C.

[The above letter was received some time ago, and should have appeared before, but with some others it had to give way to those deemed more important. In relation to the wonderful grass which is spoken of in the Patent Office Report, we would refer our correspondent to the concluding paragraph, in which the readers are informed that the fortunate possessor has a "limited quantity" of the seed for sale. Of course when the Patent Office Report is used for an advertising medium, we must expect to see some "puffing" and "blowing" done in it. This will explain many of the wonderful qualities of the *Ceratochloa*, which is referred to above.

We have had no report as to the capabilities of the King Philip corn,

We know nothing of the "Alsyke clover."

There are several varieties of white flint wheat, all of which are mere improved sorts of the old white flint, a hardy species of wheat which early became a favorite in the wheat growing portions of New York, both on account of the size and weight of the grain and also on account of the quality of the flour which it produces. The old flint wheat was improved by several growers, especially by a well known wheat grower of Western New York named Harmon, who originated a variety called the "Improved White Flint," and which is quite a beautiful grain. Soule's wheat is a kind which was crossed with a variety of Virginia May wheat, and a species of white wheat much grown some years ago in New York by a man

named Soule, who took a good deal of pains to cultivate andimprove the seed. This variety issaid to resist thefly well, and to mature early, giving a good returna variety of grain which alwaysbringsthe first price in the market.

We do not know that chess is indigenous, to many soils. We know that itis very easily propagated, and that a single seed will in a year or two furnish plants enough to make it appear as though the plant was really a habitant of the soil. June grass and chess belong to two different families of the grass tribe.

Stumping It.

This is a phrase well understood by politicians, but sorry to say, not very familiar among farmers. By the one it is employed to makeway for political majorities, party measures and partial enactments ;—by the farmer "stumping it" is to make way for the plow, —the world's life-preserver,—and for thorough arable culture. All good farmers abhor the one kind and extol the other.

Most of our fields in the west, under 20, are adorned with a greater or fewer number of those "old settlers" the stumps—grown gray in dominion—and looking as venerable as the seniors of old Gov. Stuyvesant's council.

A ten acre lot of ours—now 22 years under *Skinny-opathic* treatment,—separated about a hundred of them a month ago ; this field now shows its clean face to only one—a regular claw-footed, old "fogy"—who means to "stick to our side," till his muscles rot from his bones, if all improvement goes to the wall. Well, we have given him a *rotation lease*—term, five years—at the expiration of which he too must pull up stakes. This field has lain in grass for five years, and it was now to be broken up for Indian corn. But the stumps must first come out. Provided with team, levers, shovels, axes, chains, two of us went at work, —our motto, Lawrence's dying exclamation,—*"Don't give up the ship;"*—dug, pried, drawed, for three industrious days, when all up-turned, save one, we shouted a glorious victory. Sam Patch's noted saying is true, "that some things can be done as well as others," if there is a mind to do them.

Now reader, don't say in your mind, as some of our neighbors did to us, "why its such an *awful* job." Don't rake the old stumps, break your plows and wear out your harness and your patience any longer. Remember that it is a job which once done, is done forever. You can have no conception of the superior ease, efficiency and beauty with which you can accomplish work, until a trial is had.—B.

To Fatten Fowls.—The best food for fattening fowl is potatoes mixed with meal. Boil the potatoes and mash them fine while they are hot, and mix the meal with them just before it is presented. They fatten on this diet in less than half the time ordinarily required to bring them to the same condition of excellence on corn, or even meal.

Answers to Inquiries.

Most of the following inquiries were received last month, but not in time for the August issue.—B

Cellar Floors.—"J. B. A," Calhoun co. As you appear to be versed in the matter of building, can you tell me the best method of making a firm and durable cellar bottom, on a loose gravelly surface, after the walls are up ?

Take in this proportion : one barrel of water lime, to two barrels of clear plastering sand, mix thoroughly while dry. Now prepare your bottom by removing all loose sand and gravel, making it as nearly level as may be. Mix your mortar in small quantities and apply as quickly as possible. Put on three coats pretty thick. This is all there is about it—a very simple and easy process. In your case we should put on the first coat quite *thin*.

Changing Seed.—A. R., Cass Co. Will seeds run out as some say they will, and is it an advantage to change seed occasionally ? What is your opinion about the matter ? Most of my neighbors think it necessary to change every five or six years.

Yes, seeds will "run out"; so will races of animals—with some farmers. Farmer *Thoughtful* selects the earliest ripened ears in the cornfield for his seed, and places it in a dry cool place till planting time arrives. His seed does not "run out." Farmer *Thoughtless* plants out of the crib ;—his seed "runs out," and he believes there is a strong tendency in seed-corn to degenerate, and hence a great advantage of *changing* seed.

Farmer *Thoughtful* takes great pains in preparing his seed wheat, freeing it from all foul seeds and all light and feeble grains. He sows none but such as will send out strong, healthy stocks. No one ever saw Thoughtful going off a day's journey to change seed. Farmer *Thoughtless* blows the chaff out, and chess,—for he "wont grow that pestiferous stuff"—and sows his land. His fields show a great proportion of short and feeble plants, with small heads and small wheat. "This seed," says he, "has pretty much *run out*, and I must change with some one out of the neighborhood before I sow again ; it is certain that seeds of all kinds must be changed about so often." Excellent philosophy this, for Farmer Thoughtless, no doubt, and he finds advantage in its practice. So with all those farmers who lay so much stress on the necessity of changing seed. The *necessity* for it, is the result of sowing immature and imperfect seed repeatedly, and harvesting feeble, sickly crops.

Preserving Fruits, &c. Fresh.—Mrs. L. M., Oakland co. All fruits and vegetables should be cooked nearly done in the ordinary way ; add seasoning, (except butter or other grease,) and put at once into bottles, or tin cans, standing in boiling water. Cork after the steam is expelled from the bottles, and cover with sealing wax, or common grafting-wax, and the work is finished. Tomatoes

were upon our table the past winter, prepared in this way, which were as fine as fresh fruit. Berries should be put in fresh, and cooked pretty well in the cans or bottles before corking. In this way their form is preserved better.

The Onion Worm—C. H., Wis. Can you give me a remedy for the *onion worm*, or maggot?

Take common negro-head tobacco (the twisted plug,) steep in water, having the liquor *moderatley* strong. Pour this directly upon the rows of onions, and the worm will not trouble your crops again that year. It must not be too strong.

Chidham Wheat.

I herewith enclose a medium sized head of this variety of wheat. It was introduced by the Secretary of the N. Y. State Agricultural Society, from England, soon after the World's exhibition at London. In England it was considered one of the best varieties of wheat, and drew many prizes. It is a choice white wheat, free from beards—stouter in its growth than the flint wheat, with longer heads, and is equally as hard to shell out, and thus far proves hardy against rust. It is, particularly on land liable to heave, more apt to winter kill by frosts than some of our well established varieties. But it improves in this respect each year. On land not liable to heave it is well worthy a trial.

My crop last season amounted to 7 bushels, which I divided with two neighbors, not having any convenient place to sow it myself. It was sown under not very favorable circumstances, about the 20th Sept. along side of Soule's wheat. The result of the harvest proves the Chidham to be at least one third better, both in straw and berry. It was less effected by the fly than the Soules. If any of your readers wish to try it in a small way, I will cheerfully send a sample to all applicants who will enclose a stamp or two to cover return postage. An extra stamp to be retained for the trouble would be acceptable though not demanded.

Georgia Rye.

I also enclose a head of Georgia Rye, a small sample of which I obtained from Virginia two years since. I have not tested it sufficiently to speak decidedly of its merits. But so far I am pleased with it as promising nice. It is a winter rye. If it succeeds well, from its very large berry which is clear and white, almost, as wheat, it must prove an acquisition. It is very short strawed, shorter even than wheat. To any one desireus of testing it in a small way, I will send by mail, a small sample for two postage stamps. I wrote to Virginia to obtain a few bushels for this fall's seeding, and found I could not get any at any price.

T. E. Wetmore.

North Cannon, Kent Co. Mich

Query about Wheat.

One of your subscribers at Laphamville, desires me to make inquiry of you or some of your subscribers through the Farmer, concerning the application of lime, plaster and salt to wheat this fall as a preventative to the Fly. Would it be beneficial against the Fly? Would it help the crop? In what proportions, how and when should it be applied?

An answer from any one having had experience in the matter, through the Farmer would much oblige him, and perhaps many others. T. E. W.

[We do not know from actual experiment that these articles would have any effect, nor are we aware how salt could possibly do any good. The nature of the fly is such that we doubt if any application to the *land* would have any effect. If the wheat grower, knowing and having studied the nature of the fly, could be sure of the time when it was about to lay its eggs, and by an application of plaster or slaked lime, or other substances, render the plant distasteful to the fly, and thus prevent it from laying its eggs in the stem of the young plant, then an application of plaster or lime might be considered beneficial. Its efficiency, however, would be altogether dependent upon the time it would be needed.]

Curculic—Chickens among Vines—Recipe for Washing.

Mr. Editor:—I had a large thrifty plum tree which blossomed full every year, but the curculio left not one to ripen. At length they began to infest other plum trees. In 1853 I cooped young chickens near the tree, and made a ring of tar two or three inches around the trees, twelve or fifteen inches above the ground; I renewed the tar as often as it got hard, which was every two or three days; the result was that I had a good crop. Last year, being confined to the house with inflamed eyes, I did nothing; consequently lost my plums. This year I cooped among my trees plenty of chickens, and omitted the tar and other remedies mentioned in the *Farmer*. Having been most of the time from home myself, the curculio took all, this year; so I think the tar and not the chickens saved them in '53. It is said that tar is dangerous to the trees, but it did not injure mine, for as soon as it was no longer needed I shaved it off, it having formed a thick band almost as hard as iron.

I noticed that one of your correspondents in the July number, recommend the cooping of a hen and chickens among vines as a remedy against bugs. I regret that the *breed* necessary for that purpose was not mentioned, as I would give more for a pair of such chickens than I would for a pair of great layers, over which there has been more crowing and cackling among men than among the fowls themselves. But to be serious, the same remedy has been occasionally

recommended for the last forty years, and I have tried it several times but could never induce a chicken to come any nearer devouring one of those troublesome insects than to turn a suspicious eye towards it. I think a feather from a hen's wing stuck into a hill of vines and occasionally saturated with the spirits of turpentine will do more towards extirpating the bugs than half a dozen broods of chickens.

In your July number, you also acknowledge the receipt of some washing fluid, but said that no recipe for making it had been given. If you choose, give your readers the following, which has been used for several years in my family, as the best among many.

For an ordinary washing for a family of four persons, put four gallons of water into your boiler, and when hot pour one gallon on two table spoonsfull of unslaked lime; when it settles clear, drain it into your boiler with the balance of the water, and add two spoonsful of sal soda and half a pint of soap; when it boils, put in your clothes, having them previously soaked over night in cold water; before putting them into the hot water, rub a little soap on the dirtiest parts. Boil from forty-five minutes to an hour, rinse in two waters, bluing the second, then wring and hang them out to dry. If any streaks should be found not quite clean after boiling, a slight rubbing in the first rinsing-water will make it clean. M.

Flint, August, 1855.

Curculio and Cut Worm Remedies.

Mr. Editor:—The following article which I cut from the Cincinnati *Gazette* of the 7th inst., on the subject of the curculio, which you will please insert, reminds me so forcibly of some other remedies that *sometimes* appear in *some* agricultural journals, that I cannot resist the temptation of adding another or two of the "same sort" for the edification of your readers.

The Curculio—Sure Remedy.—We have the following account from James Taylor of St. Catharine's, C. W., a few miles from Niagara Falls, of a pretty effectual remedy for the great pest of the plum-grower—the curculio. He says:

"Our locality being much infested with the curculio, and observing in one of your issues last spring what had been pronounced by Mr. Jos H. Mather, of Goshen, 27 miles south-east of the place where the writer resided, as an effectual remedy against its ravages, allow me for the benefit of your readers, to state *my experience of its efficacy.* The proposed remedy was a mixture of sulphur, lard and Scotch snuff, to be rubbed freely on the trunk and branches. This I applied according to directions, and it is true that I had a splendid crop of plums, some of the choicest varieties, always most subject to the attacks of this insect—viz: the Bolmar, Huling's Superb, &c., being perfectly loaded; but mark the result. On examining my trees last fall, *I found all that I had applied the mixture to, in a dying state*, and I have lost them all, with the exception of one or two trees. The operation being rather a troublesome one, I did not apply it to as many as I should otherwise have done, or I should have lost more. So much for quack nostrums. The remedy proved worse than the disease. Perhaps my experience will be useful to others."

Again, in a very spirited and ably conducted agricultural journal issued not a hundred miles from Detroit; in the May number thereof, is an article on the subject of "Cut Worms," recommending the plan of making holes in the hills of corn to trap the worms; besides the additional remedy of making food for the birds in supplying them with plenty of "grub."

Now, sir, notice the logic of this plan; the writer states that he made the holes 4 or 5 inches deep; and that "almost every hole had one or more worms in it;" then he says that "the birds will not pull up the corn, for they will not take the trouble when they can find plenty of grub."

I should like to know what kind of "birds" the fellow has in his country, and how long their bills must be to enable them to reach a "grub" in the bottom of a hole 5 or 6 inches deep.

I was simple enough to try his plan a *little*, in the face of his absurdities; having some early water-melons which the worms were about to destroy, some holes were made *according to directions*; and the only effect that could be discovered was one worm, which, after having bitten off and filled himself with the plant, snugly ensconced himself at a sufficient depth below the surface of the ground to *keep cool*, with his head sticking out of the side of the hole, where he could quietly behold what was going on above.

Suffice it to say that the holes remained until all the vines were eaten off.

Of a piece is his recommendation to apply "about a table spoonfull of lime and ashes to each hill of corn, making it grow luxuriantly; while that to which it was not applied, (about ¼ of an acre,) looked pale and yellow."

The effect, he says, was visible after the corn was husked. I suppose that the one-fourth of an acre was his corn-field, and that part of the field on which he tried the experiment, was six hills which stood near his stable.

If that is not the quintessence of humbuggery, then we will give it up.

There are not a few remedies of a similar kind put forth by those, it would seem, who desire to see their scribbling in print, that no sensible person would be willing to be seen trying, lest he might be charged with insanity and hurried off to the Insane Hospital before he could have time to make an explanation.

Experiments or new discoveries, to be worth even a reading, should be well tested by the inventor, and found to answer the desired purpose satisfactorily under all circumstances beyond the possibility of a failure, before they are subjected to the public.

Very truly, H. Yeaman.

La Porte, Ia., June, 1855.

Mr. Fifield's Heifer.

Messrs. Editors:—I have had the pleasure of seeing some fine specimens of improved stock on the farm owned by A. P. Fifield, of Canton. Here is a small stock of the right kind, and I presume he finds it far more profitable than to keep a larger stock of inferior quality. Mr. Fifield's cattle are all good, but he has a two year old heifer on which I am not afraid to stump Michigan, taking into account her age, build, size, weight and color. I have seen but a small share of the stock of this State, but I am not afraid. to stake this as the premium heifer of Michigan. Mr Fifield gave me her measure and weight, but I did not note them at the moment, and dare not give them from memory. He wishes to know how he can obtain a likeness of his heifer. Please inform him.

J. A. B.

[The only mode of having a good portrait made of such a heifer, is to employ a competent artist to go out to the residence of Mr. Fifield. After the portrait is taken, it may be drawn on wood by the engraver, and printed from the wood engraving. These engravings are expensive, but some of our farmers are spirited enough to undertake to get them.]

From our Agent—Mr. Stanbro's Implements.

When I was at the farm of Mr. Samuel Stanbro, of Salem, I had the pleasure of inspecting some improved implements of his manufacture. The first was a grain hand rake, constructed with two very light wheels, to run, one on either side of the swath, and the rake in the center. The whole is very light, and with a slight raising of the hand is slipped up entirely out of the way of the binder, or while binding. Mr. Stanbro had placed some straw along on the ground, which I raked up with the machine, and having been something of a practical farmer in the early part of my life, I think I can safely recommend it as a useful implement that should be owned by every farmer who cuts his grain with a cradle. Mr. S. tells me that a boy capable of binding, or a man who is partially past the age of labor, can rake and bind and keep up with the cradle with ease; and I should verily believe from my observation the statement to be true.

The second improvement was a metalic fastening for cradle fingers. It is simply, a wire clasp around the finger instead of boring, which weakens the finger. It strikes me that this is a decided improvement, and I wonder why it was not thought of long ago, when I was young and used to take such delight in swinging the cradle.

The third was a hand seed sower, for sowing small seeds, such as turnips, the grasses, and millet. Having had no practical experience with any kind of seed sower, except the bodily hand, I am not so well prepared to speak of this; but, I can confidently say of the whole three that they are very simply constructed, and are light and easy to handle, and are truly labor saving and money-saving implements for the farmer; and as such I call the attention of the farming community to them, I think if farmers once try them, they will not willingly do without them. Mr. Stanbro keeps them for sale at very reasonable rates. They are warranted to give satisfaction or the money refunded.

J. A. B.

[We are glad to hear of improvements among farmers for their own comfort and benfit. The above should have appeared in the August number, but was accidentally mislaid.]

Information Wanted—Marl Lime.

Mr. Editor, Dear Sir:—I would like to get a little information through the *Farmer* in regard to liming wheat before it is sowed. Would it be of much benefit on sand and clay loam soil? And will marl lime answer instead of stone lime?

Yours truly, Young Farmer.

Owasso, July, 1855.

[The usual practice in regard to liming seed wheat has been to roll it in fresh slacked lime after it has been steeped in brine. This has been usually practised where wheat has been liable to have smut in it. The brine is made strong enough to float an egg, and the wheat is usually left in it from eight to twenty-four hours according to the judgment of the farmer who is about to sow it; it is then taken out and spread upon the barn floor, where it is allowed to drain and become partly dry, and then sprinkled with fresh-slacked quick lime. This treatment has been found very excellent as a preventative of smut, and is practiced by a great many farmers. The steeping of seed in brine and liming it also serves as partial specific manuring to the young plant, and may be somewhat beneficial in promoting its early growth. Marl lime would not answer for this purpose, but if "Young Farmer" has plenty of it, it will be doing his sandy and clay lands a benefit by drawing it on to them, giving it time to get air-slacked through the winter, and then spreading it over his fields in any quantity he may choose to apply, from ten bushels to fifty per acre. If, however, "Young Farmer's" wheat lands now have plenty of lime in their soil as part of its components, and as is the case with most of the wheat growing soils of the State, his wheat would receive little or no benefit from the application of lime to his seed wheat, beyond the checking of the spread of smut, if that fungus should be prevalent on his farm or in his neighborhood.

Meanwhile we shall be happy to hear from some of our correspondents, what has been their practice with marl lime, where it has been applied, and also what has been its effect on the land to which it may have been applied, and the crops grown by its aid.—Ed.]

Information Wanted.

I want to inquire the best method of clearing land by girdling, the best time to girdle, how long to let the timber stand after girdling, whether to cut it down or put fire into it while standing? I want to seed it down this fall and use for pasture until I get the timber off. Some advise sowing before the leaves fall, and then lop the underbrush, but I think I prefer to cut the brush with the leaves on and burn it over before sowing. Will some one who has tried it please give his opinion as to the best mode of getting rid of the timber, girdling, seeding, &c.; in short all that he may consider beneficial to others concerning the process. My soil is a deep sandy muck; the subsoil has considerable sand and gravel mixed with it so that water readily drains from the surface. The timber comprises most of the kinds common to timbered lands. EDWIN C. HARRINGTON.

Grat ot, July, 1855.

☞ The usual time for girdling is in winter or spring, before the leaves start or after they have fallen. We believe in cutting up the underbrush and getting as good a burn on the fallow as possible. It will help materially in fitting the land to give a good crop of grass for pasture. The other mode is a make shift which might occasionally answer, when a farmer was in a hurry and with little help, but we do not believe that it is at all economical. There is no easy plan of getting rid of the timber on a piece of timbered land, so as to do away with hard work, which is the main point in our correspondent's letter. However we shall be glad to receive the experience of some of our practical men on the most easy process of getting rid of the "big trees," and hope to hear from some of them soon.

Another Knowing Colt.

R. F. JOHNSTONE, DEAR SIR:—I am induced to relate the following incident of the wonderful sagacity of the horse, on reading the statement of Mr. J., Thompson, of Almont, respecting his "knowing colt." A few mornings since, being on a visit to a friend's, and while examining his stock of cattle in his yard, I heard an unusual noise at the well. Turning round I saw a three year old colt in the act of drawing water from the well. This he did by seizing the pole with his teeth, and by a few vigorous jerks upward, raised the bucket to the surface, when plunging in his head, he prevented the bucket from falling back, by crowding it up against the side of the curb. This he does whenever thirsty. This colt is the property of Mr. George Durfee, of Livonia, Wayne county. He no doubt has a correct appreciation of the beauties of the song of the "Old Oaken Bucket," and a nice discrimination of the superiority of water "quaffed" from this "moss covered" receptacle.

Respectfully, J. S. TIBBITS.

Plymouth, Aug. 5, 1855.

Drain Tile.

[The following letters have been sent us by Mr. Daines, to whom they were written in reply to inquiries made by him respecting the kind of tile preferred, the cost and profits, the plan and manner of laying them, and the soil in which they are laid. The letters are from responsible men who have tested the tile, and their opinions are entitled to consideration. The subject of draining is exciting an increasing interest among farmers, and all testimony goes to prove its great profit and utility.]

Mr. Jones' Letter.

MR. DAINES, DEAR SIR:—In compliance with your request I give the following answer to your inquiries.

I have about 137 rods of horse-shoe tile now laid. The first was laid some three years ago. At the same time I laid 20 rods of pipe. I prefer the horse-shoe to the pipe. My soil partakes largely of clay. My land descends slightly to the east; the fall being about 2 feet in 20 or 25 rods. After the ditch is prepared for the tile (it should not be less than two feet deep) I commence at the upper end laying down, having first placed my boards on the bank of the ditch so as to be within reach when standing in the ditch. The boards used should be ¾ of an inch thick, and 4 inches wide. The cost is from three to five shillings per rod, according to the depth. As to the benefit of underdraining, I might say it is almost beyond computation. Where once rivers of surface water carried off the cream of the land, draining has turned its course under ground, leaving the surface soil light and fertile as any of our western prairies.

I might write a lengthy essay on the subject, but let it suffice when I say that where once water stood from March to July, there is now a luxuriant growth of both wheat and oats. Yours truly,

E. O. JONES.

Troy, July, 1855.

Letter from Mr. Irish.

MR. JOHN DAINES, DEAR SIR.—Your favor of the 2d inst., is received in which you request answers to certain questions therein propounded.

1st. The number of rods of your tile that I have used is about two hundred, and they have been in use something over a year, the kind is three inch horseshoe.

2d. A part of the soil is sandy loam intermixed with gravel, the other a clayey loam.

3d. Land nearly level, with but slight fall, probably not more than one inch to the rod. I commence laying the tile at the upper end of drain and stop the upper end of the tile with stone to prevent the dirt from getting in.

4th. The cost of drain is about five shillings per rod exclusive of drawing the tile. As to the benefits, I think the increase in crops will pay the expense of draining in from one to two years. From what I

have observed, I think the tiles will prove to be durable, as those I have noticed which have been exposed to the weather through the winter do not appear to be affected by the weather and frost in the least. Respectfully Yours,

J. M. IRISH.

West Bloomfield, July, 1855.

Mr. Perrin's Sheep.

MR. EDITOR:—Having shorne my sheep and sold the wool, I will give you an account of the profits. I had three hundred and seventy-one and a half pounds washed wool from sixty-one sheep. The sheep were mostly ewes; the wool sold at thirty-six cents per pound, making two dollars, nineteen and a half cents per head. The lambs raised from the same ewes are worth at least one hundred and fifty dollars. If any man will fetch me ten ewes that will shear more clean wool than my ten best at one year's growth, with the same chance and keeping, I will pay fifty dollars per head, after giving them a fair trial. They shall be kept in the same flock with mine. I do not care where they come from or what breed they are if their wool is fine. My fleeces average about half a pound per head lighter than they did last year.

BENJAMIN PERRIN.

Park St, Joseph Co,. Mich., July 19, 1855.

Water Pipe.

MR. EDITOR:—Allow me, through your valuable paper to inform *all* who wish a perfect article to conduct *water*, that I am engaged in an establishment at Middleburg, Summit Co., Ohio, where they manufacture an article of *stone* pipe, that is *perfect*, in every sense of the word, for conducting water, for the use of families, railroads, tanneries, distilleries, stock &c &c. The Pipe is manufactured from a superior article of potter's clay, is coated upon the inside with an *extra superfine* clay (which, when burned from a glass of the purest kind) has a tenon upon one end, and a socket on the other; it is dried, then put into the kiln, and burned until it becomes hard, as the hardest kind of granite rock. While it is red hot, salt is thrown into the kiln, which spreads over the outside of the pipe, and forms a perfect glaze, so that it is *impervious* to water, both in and out side. Neither water, gas, earth, nor acids of any kind, have any effect, whatever upon it. Water may be conducted through it, five, ten, twenty or a hundred miles, and discharge itself just as pure, as when it leaves the spring. It is, in fact, a perfect *glass tube*, capable of sustaining a very great pressure, from 100 to 1000 feet head. It is a *perfect* non-conductor of heat. Water will flow through it, (when properly laid under ground, miles; and come out quite as cool as when it passes into it. You avoid all the *poisonous* properties imparted by lead pipe, also all the rust and taste of the the iron, while it is at least 100 per cent. cheaper on the start, and *far* more durable than either iron or lead, for when once properly laid down, it will last *forever, as has been prooved time and again.* It is in fact the most *perfect conductor* for water, in the known world. It is made in joints, about 22 inches long, and laid in water lime cement, which become strong of itself, after laying under ground for, say 20 or 30 days. I would advise every one to purchase stone pipe, when *any* kind is wanted for conducting water, either *to* or *from* their premises. It is cheaper than even *logs*. We manufacture all sises from one to four inches calibre.

We are also manufacturing, from the same kind of material, a *sewer pipe*, from 4 to 18 inch calibre, for draining cities, which can be furnished for less than one half what iron can be All communications addressed to me at Akron or Middleburg will receive prompt attention. F. ADAMS.

Correction—Inquiry.

MR EDITOR:—In explaining the reason why this climate is milder than elsewhere in the same latitude, I inadvertently made a statement which, on reading it after publication, I find not to be scientifically correct, though the application is strictly true. Will you please publish this correction?

A given measure of water does *not* diminish in volume till it cools to 32 degrees of Farenheit's thermometer, as stated; for the ice would form at the bottom of streams and lakes; but only till it cools to 49.4 degrees, and then remains on the surface till it has cooled to 32, when a quantity sufficient to throw off sufficient heat to warm the rest somewhat, freezes and forms a covering to it. By keeping a small quantity of water perfectly quiescent, it may be cooled down to 32 degrees, or ten degrees below the freezing point; but on the least agitation, then, a large proportion of it freezes suddenly. H. R. SCHETTERLY.

P. S. I find that my wheat has smut in it, and I wish to inquire the price of the cheapest *effectual* smut-machine, where it may be bought, and the price. It need to be only a small one. Is there one that may be operated by hand? What is the probable cost of attaching one to mill gearing, if there is not one operated by hand? Will a threshing-machine clean wheat of smut? H. R. S.

Grand Traverse, Mich., July 26, 1855.

[We have to call the attention of venders and makers of smut-machines to the inquiries of Mr. S., who lives in the Grand Traverse country, a place which is rapidly settling with a population which will soon create a demand for agricultural machinery and implements of all kinds; and for which a limited demand exists even now, that is not more than half supplied. A threshing-machine aids somewhat to get rid of smut in wheat, but we have never known one to clean wheat entirely from it so that it was fit to go to the mill.—ED]

Experiment with "Grown," or "Sprouted" Wheat.

In the fall of 1854, Andrew Robinson, Esq., of Sharon, Washtenaw county, sowed three acres to wheat that had been badly grown, or sprouted while in shock. This seed collected at the tail of the mill while winnowing; so the very *lightest* was thus obtained. The result was, that it came up as well, looked as healthy, and produced a abundantly the following harvest, as other fields sown with seed in usual condition. JAY.

[There may have been no perceptible depreciation in the crop grown from such seed, but still there may have been a very great difference between the crop raised and what would have been the produce of sound seed under the circumstances. We certainly would not advise any of the farmers of this State to trust to obtain such a result next year from seed of a like kind as was experimented upon by the friend of "JAY" above spoken of. Sound seed, and sound animals are more likely to produce more perfectly and more abundantly than injured grain and sickly beasts can be expected to do, as every breeder knows.—ED.]

The Taste of Ruta Bagas in Beef and Butter.

In the January number of the *Farmer*, I saw some remarks by Mr. H. Easton, on using saltpetre to take the bad taste out of milk produced by feeding rutabagas to cows. I have eaten of butter and beef which tasted very strong and bad; but I have been in the habit of feeding them to milk cows, and to beef cattle, and have found no bad effects from them on either. I have taken some pains in cleaning them when they were pulled, and put them in a cellar where they were not warm enough to heat, nor cold enough to freeze. I am satisfied that the bad effects of the rutabagas on beef and milk arise from their being frozen after they are pulled, or from their heating. Keep them sweet, and I will warrant the beef and milk to be the same. H. H. ALLEN.

Paris, Kent Co., August,

THE SHEEP SHEARING AT TIPPECANOE.—Some time ago we received a notice of a sheep shearing Festival at Tippecanoe, and the manuscript was so badly written that we made it out to be in Indiana, and so located it. We have since received a letter from Mr. J. S. Goe, informing us of our mistake, and that he was located in the Keystone State, and did not have the honor of being a Hoosier. As Mr. Goe's stock has taken some sixteen premiums, and is highly creditable to that section of Pennsylvania of which Fayette county forms a part, we hasten to correct the error which is to be imputed altogether to the manuscript, which we have examined, and find that what is intended for Pennsylvania looks as much like "Inda." as any mark we ever saw made by a pen.—☞Mem.—Always write names plain for printers.

HORTICULTURAL DEPARTMENT.

J. C. HOLMES, EDITOR.

Pears on Quince Stocks.

In the July number of the *Farmer* an inquiry is made respecting the cultivation of pears on quince stocks. If our friend B. is intending to plant an orchard for the purpose of raising pears for sale, and he has a plenty of land, which we presume he has, we would advise him to plant pear trees that are worked in pear stocks; but if the trees are to be planted in the garden, for family use only, we would advise the planting of trees that are worked upon quince stocks, being careful to select thrifty trees of the varieties that are known to succeed well upon the quince.

We have raised thousands of pear trees, and fruited over a hundred varieties upon quince as well as pear stocks, but we can assure our correspondents that we have at present no interest, whatever, in the sale of fruit trees; even had we, we hope no pecuniary interest would cause us to speak to lead astray those who are asking for information upon subjects connected with horticulture.

The Angers quince, which is a free growing variety and easily propagated by cuttings, is the one preferred for stocks upon which to work the pear, but the man who undertakes to propagate every variety of the pear even upon this stock, expecting all will grow equally well, and give an abundance of fruit in from three to four years, will undoubtedly find his mistake; for while some make a rapid growth, and handsome, fruitful trees, and continue many years, others make but a slight growth and soon die.

Were we about to plant a pear orchard for fruit, we would select a clay soil, underdrain it thoroughly, plow it deep, run a sub-soil plow in the furrow immediately behind the other plow, so as to break up and pulverize the soil to a great depth.

We would prefer to work the ground for at least two years in succession before planting the trees, so as to get it well pulverized, rich and light throughout the whole length and breadth of the acre designed for the orchard. When the ground is well prepared, then plant the trees, still keep the plow going so as to keep the soil light, porous and moist. This mode of cultivation is more sure, better and cheaper than shallow plowing and continual watering. The roots of the pear, if permitted, strike deep and strong as well as far and wide, therefore we would prepare the ground in a way to accommodate their natural habits, and not confine their roots within the compass of a small shallow hole.

The trees may not come into bearing so early as when they are stunted by injudicious, careless planting, but the result will be an orchard of strong, healthy, vigorous trees, and an abundance of fruit.

There are some few varieties of the pear that prefer a light, and others a loamy soil, but for the most part our clay soils suit best.

In planting an orchard of standard pear trees, there may be placed in each space in the line of trees, a dwarf for immediate fruiting, and to be removed when overshadowed by the standards.

Were we planting pear trees in a garden of limited space we would cultivate the pear on quince stocks as dwarfs, and on pear stocks as pyramids or low standards.

In selecting pear trees on quince stocks, select thrifty trees of the variety that are known to succeed well on the quince, see that they are budded near to the ground so that in transplanting, the quince stock may be set wholly below the surface of the earth, or at least so low that the place of junction of the scion with the stock may be upon a level with the earth. The roots of the quince are a mass of fibres, running near the surface of the earth, but if in transplanting it be placed a little deeper than it originally stood, no damage will be done, provided the soil is properly prepared, for the quince stock will very readily accommodate itself to its new situation by throwing out new fibers near the surface, and the pear by coming in contact with the earth may be induced to strike and finally establish itself upon its own roots.

Some of the advantages to be derived from cultivating the pear upon quince stocks are, they can be planted six or eight feet apart, and many varieties be cultivated in a small space; they come into bearing in from three to four years from the time of being budded, and the family supply of pears can be had from the garden in a short time after planting; they do not grow so tall as to overshadow the whole ground, thus giving other trees and plants the same chance to profit from the effects of sun, air and rain, as themselves.

In 1852 at a discussion on fruits, Col. Wilder of Boston, said: "Much attention has been given of late years to the cultivation of the pear on the quince stock, and in relation to which I have been requested to give the result of my experience. As a general rule, no tree will succeed for any great length of time where it is grafted on any other than its own species. There are, however, exceptions to this rule, and among them, some varieties of the pear; which grow vigorously, bear abundantly, and which seem to be even better adapted to the quince, than to their own root. An impression extensively prevailed unfavorable to the cultivation of the pear on quince. This has arisen principally from an improper selection of kinds, or from injudicious cultivation. There are, however, three considerations which are absolutely necessary, viz., a deep, rich soil,—the planting of the quince stock entirely below the surface of the ground,—and a systematic and scientific course of pruning, as the tree progresses in growth. Objections to this species of cultivation have been made from the belief that the quince was a short-lived tree, and that the crop must necessarily be small from what are termed dwarf trees. Such, however, is not my experience. On the contrary, I have pear trees on the quince root which are twenty-five years old, and which produce annually a barrel or more of fruit each, and for aught that I can see, they are destined to survive as long as any that I possess on the pear root. These may, and probably have in some instances, thrown out roots from the pear stock, but whether this be so, or not, instances are not rare where such trees have attained in France, the age of more than a hundred years, and we know of a quince tree in Massachusetts, which is forty years old, and which has produced ten bushels of fruit in a season.

"The pear, when grown on the quince, should always be trained in the pyramidal form. These may be planted in much closer order than when grown as standards. We have known them to succeed well where grown at the distance of six feet apart in the rows, and twelve feet between the rows. In this way Mr. Rivers, the great English cultivator, planted 2500 Louise Bonne de Jerseys, and 1500 Glout Morceaus for the London market. We consider 12 feet apart, each way, a liberal distance. This would give 302 trees to the acre, and we are clearly of the opinion, that soil and selection of varieties being right, no crop whatever would be more profitable. Such a plantation, with proper care would yield, in the fifth year, from 75 to 100 bushels of fine fruit. As to profit, this will not appear like an exaggeration, when it is known that Glout Morceau pears, a variety which succeeds admirably on the quince, have sold during the winter, readily, at one to two dollars per dozen, in our market.

"We name as varieties which succeed well on the quince, the following, and to which might be added many more:

"Louise Bonne de Jersey, Vicar of Wakefield, Duchess of Angouleme, Glout Morceau, Passe Colmar, Urbaniste, Belle et Bonne, Beurre d'Aujou, Beurro Diel, Easter Beurre, Beurre d'Amanlis."

Peach Tree Borer.

In the July number of the *Farmer* we notice a communication from Mr. S. Barent, in which, among other things he gives a detailed account of his endeavors to destroy the borers that were injuring his peach trees; his experiments proving unsuccessful.

He says: "I told Alonzo to dig around the roots or stems and put in about a peck of good ashes; but notwithstanding, I had the mortification to see ten or twelve choice trees die during the summer."

It is possible, and very probable that the ashes proved as effectual in the destruction of the trees as did the borers. We have sometimes scattered leached ashes upon the ground between the nursery rows

of peach trees, and plowed it in, with marked beneficial results in the growth of trees. One season we laid off a piece of ground on which to plant peach trees, and in the winter directed a man to haul a few loads of leached ashes upon the ground, and, knowing full well that an over dose would prove injurious to the trees, we were very particular to designate the quantity to be put on the land; but, we being absent for a time, the man disregarded the instructions and hauled in enough to cover the ground six or eight inches deep; he did not scatter it, but left it in piles. As soon as we knew it we had a large portion of it removed and the balance distributed over the ground. In the spring this ground was plowed and peach trees planted thereon, but no tree would grow upon the places where the ashes was deposited in the winter. Much ashes, or strong lye at the roots will injure the trees, indeed we have known ashes to be placed at the roots of trees for the purpose of destroying them, and it did its work well.

The peach tree borer is a great nuisance and an exceedingly troublesome customer, yet one who understands its habits can combat with it more successfully than one who seeks to destroy it without knowing anything of them. The insect in its perfect state is a four-winged moth; this moth deposits its eggs in the summer months upon the trunk of the tree near the surface of the earth where the bark is moist and tender; the eggs soon hatch and the borer begins to work its way through and under the bark, where it may eat its way along wholly regardless of outward applications intended for its destruction. The object of the outward appliances is to prevent the moth from laying her eggs upon the trunk or roots of the tree, or to destroy the eggs; or if they produce a brood of borers, to destroy them as soon as they are hatched, and before they begin their work of destruction. If the application is made after the borer has hid himself beneath the bark and is protected by it, and by the gum that oozes from the wound, it can have little if any effect upon him, but it may destroy the tree. The trees should be examined in the spring. If any borers are there, dig them out, cleanse the wounds and cover them with grafting wax that they may heal. Then to prevent others from getting there, draw the earth from about the trunk of the tree, take a piece of heavy paper or cloth and saturate it with coal tar, or perhaps a piece of India Rubber cloth would do as well, or better; bind it about the trunk of the tree, letting it come a foot above and six or eight inches below the surface of the ground, fill in upon this with clay. Arrangements of this kind have been found effectual in preventing the moths from laying its eggs upon the tree, as it will not lay them upon the cloths, or upon the tree where the bark is so hard that the young borer cannot penetrate it. In the autumn remove the covering and examine the tree, as the experiment may not have proved sufficient to exclude all the insidious borers. If any are found there dig them out at once and not let them remain there to girdle the tree.

Peach trees on light soils are more liable to be injured by the borer than upon uncultivated clay soils.

We are intimately acquainted with some rare old peach trees that stand upon a clay soil, and have partaken of their delicious fruits for many years. We have often examined the roots of these old trees but have never yet found a borer in either of them.

Northwestern Fruit Grower's Association.

We have received the following circular, relating to the annual meeting of the North-western Fruit-grower's Association. It would be exceedingly gratifying to us to attend this meeting, but as it takes place but a few days previous to the annual Fair of our State Agricultural Society, we will be obliged to forego the pleasure, and profit to be derived from an examination of the collection of western fruit that will be exhibited there, as well as making the acquaintance of and holding familiar conversation with this congregation of western fruit growers. We hope Michigan will be represented there, at least by her fruits.

J. C. Holmes, Dear Sir:—The annual Meeting of the North-western Fruit Grower's Association will be held in this place on Tuesday, September 25th, 1855, and will continue in session four days.

This Association, organized for the purpose of facilitating and encouraging the propagation of Fruits and Fruit Trees in the North-Western States of the Union, and composed of Nurserymen and Fruit Growers from these States, earnestly solicits the favorable attention of all persons from the North-west, interested in the cause for which they will assemble.

It also respectfully solicits the attendance of all such persons from all portions of the Union, and requests them to furnish the Association with specimens of such fruit as are indigenous to, or are cultivated in their respective localities, with contributions giving the experience of cultivators as to diseases, destructive insects, &c, as may facilitate investigation, and add to the public information on these important topics.

In many portions of the Union the season has proved unusually propitious, and there will be a heavy yield of fruit. In others, frosts early in the season destroyed the hopes of cultivators. Those who have been successful in raising fruits will please forward specimens of their varieties to the Association at this place, to care of E. E. Gay.

Carriage or freight, by Express or otherwise, will be paid by the Association.

P. Barry, Esq., of Rochester, N. Y., late editor of the Horticulturist, and one of the most extensive and widely known Nurserymen and Fruit raisersin the country, has kindly promised to be present and address the Association, and also to contribute specimens of the fruits of Western New York.

As Burlington is connected with St. Louis and Minnesota by means of the Mississippi River, and with Chicago and the East by Railroad, we indulge the hope that there will be a large attendance of persons interested in Fruit Growing from all sections of the Union.

Please consider yourself hereby especially invited to be present and aid us in our investigation.

Very respectfully, (Signed by Com.)

Burlington, Iowa, August 1855.

LADIES' DEPARTMENT.

The Farmer's Life for me.

BY HENETTE.

Wealth may boast her hoarded treasures,
Pride no joy like her's may see,
Dissipation vaunt her pleasures,
Yet the farmer's life is the life for me,—
With its freedom blest,
From the stern unrest
Of the crowded marts of life,
With its rosy health,
What a mine of wealth!
With its quiet unmarred by strife.

Toil it hath, yet with it there is
Sunlight of a willing mind,
And the farmer's home so fair is,
None a fairer e'er can find,—
With its glowing hearth,
With its heart-felt mirth,
When the winter fire burns bright;
Oh! the farmer's cot
Is a cozy spot
In a chill December's night.

His are Summer's richest treasures,
All her wealth of fruit and flowers,
All the intellectual pleasures
Of her bright instructive hours,—
His the golden gleam
Of the sunset beam,
And the mild majestic night;
His the first soft ray
Of the rising day,
And the dew-drops sheen and bright.

Far from heartless Fashion's empire,
Far from Mammon's haunts of sin,
From the dens of Dissipation,
And the crowded city's din,—
He may safely rest,
Oh! now truly blest,
With the friends he holds most dear,—
And the great world's noise,
Cannot mar his joys,
In his calm secluded sphere.

Albion, June, 1855.

Furniture—Peaches—Pickles—Preserves—Washing.

For a long time I have been an interested reader of the "Ladies' Department" of your useful periodical, and since noticing in a late number that my directions for "washing white flannel, silk, &c." met with the approval of a "house-keeper of some experience," I am encouraged to offer a few suggestions on other points of domestic economy, hoping they may not be wholly without value to some, at least, of a large and interesting class: *the young house-keepers, and those who expect to become such*. I would that every farmer's daughter in Michigan who takes upon herself the onerous duties of married life, might be both "a model wife," and house-keeper, perhaps not after the pattern of the writer in the time of Henry the Eighth, but better adapted to the age and country in which we live.

CARE OF FURNITURE.

Though we may not all have our houses "handsomely furnished," yet who with correct notions, and truly refined taste, would not prefer a neatly swept domestic carpet, with a few articles of plain, well-kept, old-fashioned furniture, nicely arranged, to a more expensively furnished room, where the dust is suffered to accumulate in the veins of the carved mahogany, or finger prints visible upon the tables, and the colors of the carpet dull for want of *thorough sweeping*? In these days, when Elizabethian and chay-flower furniture is so much sought after, let us, if we do not choose to purchase new, take care of our old; which, though not dating quite back to the time of our Pilgrim Fathers, has still much of that richness of hue only acquired by age; *good old things, always look good*, and the older the better. It is well to clean up every article of furniture as often as once a year, besides thoroughly rubbing daily, with a silk duster. Take soft water and a cloth and wash off a small piece at a time, following with a dry cloth immediately then take a little boiled linseed oil, such as used by painters, or sweet oil will do, and with a bit of flannel rub *well in* all over the article, and rub dry with an old piece of silk; should there be any rough spots they should be rubbed down with a bit of emery or fine sand-paper before oiling. Should you choose still to improve its appearance, you may varnish; taking care not to lay it on too heavily, and brush *with* the grain. White spots upon tables caused by heat, may be removed by adding a little turpentine to the oil, and warming the flannel you rub with. It is better to wait a few days after oiling before varnishing. For a dollar and a half you may supply yourself with brush, varnish, oil, turpentine and emery-paper enough to furbish all the furniture in a house. When the varnish becomes too thick, add a little turpentine. Clean your brush by washing off the varnish in turpentine, and pour it into the varnish bottle; with care, a brush will last a long time.

PEACHES.

As the season for this delicious fruit is approaching I would ask those who have not before done so, to try other than rich sugar sweetmeats. One excellent way is to prepare the fruit when ripe as you would for preserving. Take to one pint of the very best vinegar, two pounds of sugar if you wish to have it very rich to keep a year; otherwise a pound and a half of sugar, let it dissolve, boil and skim, then throw in fruit enough to cover the surface, boil slowly; when done skim out and drain, put in more and so on till you have what the syrup will cover in your jar; as you lay the fruit in, scatter to your taste cloves, cinnamon and mace, broken in bits, rather than ground; pour the syrup over boiling hot, and you will have a jar of delicious "spiced peaches." For variety it is nice to crack and blanche a part of the peach nuts and boil with the syrup, half a teacup full is sufficient for a gallon jar.

PICKLED PEACHES.

Take good peaches, ripe, but not too mellow, wipe with a coarse cloth, set in each peach three cloves, and lay them in your jar. Take of good vinegar one gallon, and two pounds of sugar, boil and skim, then pour over the fruit and set it away. In about a week drain off the pickle and when boiling pour over again;

keep it in a cool place, well covered. In this way they will generally keep without any trouble; but sometimes I have found it necessary to attend to them again; the season may be unfavorable, or the vinegar not the best; then I drain off the vinegar into a bright brass kettle, and scald thoroughly all the fruit in the boiling vinegar fifteen or twenty minutes that the stones may be well heated, when the fruit is done let the vinegar be boiled down till quite rich, and poured over.

WASHING PREPARATION AGAIN.

Of all the preparations I have used, and they have been numerous, I give the preference to the following:

Put one pound of salt petre into a gallon of water and keep it in a corked jug; two table spoonsful for a pint of soap, soak, wash and boil as usual. This bleaches the clothes beautifully without injuring the fabric. It is particularly valuable for removing grass stains from the knees of the little boy's pantaloons.

NOT A YOUNG HOUSEKEEPER.

To wash Linen Coats.

MR. EDITOR;—In reply to S. P.'s inquiry respecting the mode of washing brown linen, I will give my recipe as the result of my own experience, as follows. Take a suds, not very strong, of cold water; let no soap touch the linen; wash and rinse without boiling, dry quickly without exposure to the sun. A little Poland starch in the second rinsing water will give it the gloss of new linen. I will add that any clothes, how ever badly soiled, are much easier rubbed clean in cold water, and when ready to boil should be put into coldwater and heated with the water. I find that clothes look much cleaner with less hard labor than when washed in hot water, and every washer will know by trying it how much more comfortable it is in a hot day than to work over the steam of hot suds. You may think this too trifling an idea to be worth publishing, if so, put it under the table; but let me ask the ladies of Michigan, I mean farmer's wives who deserve the name (there are many such) why do n't experienced house keepers give us more of their practical experience? We all love cheerful givers. Let us occupy our ground and leave no room for enquirers and N. E. D's. to advertise for—well, to say the least we should not allow them to step too far into our enclosure.

ELIZA.

Bread from Grown Wheat.

The following recipe for making good bread from grown wheat we find in the Centreville *Chronicle*. The patience and ingenuity of Michigan housewives will be severely tried on this subject we fear, and we shall do all in our power to aid them by making public the results of such experiments as come to our knowledge. Here is one recipe:

"Place the flour in a pan, under the stove, or where it may become hot and keep so for five or six hours, until thoroughly dried through. Knead the dough harder by working in more flour, and bake slower and longer so as to dry out the moisture, and you will have light, dry white bread. A little alum will improve it if the wheat was badly sprouted."

H. J. C.

We have often heard alum recommended for this purpose. A little alcohol is said to be very beneficial in making bread from grown wheat.

If our farmers' wives and daughters make any new discoveries in this line, or know of any better method than the above, we shall be glad to hear from them.

Arithmetic of Domestic Economy.

MR. EDITOR:—I have often thought that, as figures like facts present incontestable arguments, it would be an excellent mode of teaching our juveniles domestic economy to give them Arithmetical problems to solve, relating to every-day affairs—waste, profit, and loss. I will give a few examples as specimens of what I intend, hoping that if the plan meet your approbation, yourselves and others will contribute to this department,—that ladies, especially, will send problems relating to household economy. It may not be necessary to give answers for publication, but it is hoped that parents will interest themselves in seeing that their children give correct solutions.

PROBLEMS—1. If a family make one ¼ peck of ashes per day "the year round,"* and applying them to the crops, the increase is equal to ¼ bushel of corn to every bushel of ashes, how much will the farmer gain in a year by sowing his ashes, when corn is 63 cents per bushel?

2. On the same supposition, how much will he lose by selling his ashes at 8 cents per bushel?

3. By careless milking of 4 cows, each cow gives 1 pint less milk per day than they will if properly milked. How much will this amount to in 6 months of 30 days each? What will this milk amount to at 3 cents per quart?

4. Suppose a farmer, by properly saving his manure under shelter, and managing to save all the liquid manure, raises 10 bushels of wheat more per acre than he would by allowing his manure to lie in the open yard, what will this saving amount to on 5 acres when wheat is $1.75 per bushel? How much in 6 years? In 10 years?

5. Mr. Q. has 126 sugar trees. Suppose that 1 pint of sap is wasted at each tree, each day. How many hogsheads of sap will this amount to if the season lasts 20 days?

6. If Nancy uses 2 oz. more of soap than is necessary at each washing, how much soap will there be wasted each year, if she wash once each week?

N. E.

* In such calculations, call the year 364 days. This will prevent a troublesome fraction.

MICHIGAN FARMER.

ROBERT F. JOHNSTONE, EDITOR.

DETROIT, SEPTEMBER, 1855.

State Fairs for 1855.

Michigan	Detroit	October	2— 5
New York	Elmira	"	2— 5
Tennessee	Nashville	"	2— 6.
Illinois	Chicago	"	9—11
Connecticut	Hartford	"	9—11.
Canada West	Coburg	"	9—12.
Iowa	Fairfield	"	10—12.
North Carolinia	Raleigh	"	16—18.
Indiana	Indianapolis	"	17—19.
Alabama	Montgomery	"	23—26.
Maryland	Baltimore	" 30—	Nov. 2.
Georgia	Atlanta	September	10—15.
Vermont	Rutland	"	11—13.
Canada East	Sherbrooke	"	11—14.
New Hampshire		"	12—14.
Ohio	Columbus	"	18—21.
New Jersey	Camden	"	19—21.
Pennsylvania	Harrisburg	"	25—28.

☞ Our readers who would make themselves acquainted thoroughly with the wealth which nature has placed within their reach, should read the highly useful and instructive communication of Professor Winchell on the Marls of Michigan. The examination which Professor Winchell has made, and the results of which he has laid before the farmers of the State through the columns of their journal, is one of the highest utility, as pointing out how the soil may be cultivated, and even how the defects of the climate may be counteracted. The capacity of the marls of the State to retain water, and absorb moisture, and thus to render a most important service in those dry seasons to which the climate of Michigan is liable, is clearly spoken of, and furnishes a suggestion of the most valuable nature, and which we hope to learn at some future time, has been of service to some of the enterprising and experimenting farmers who occasionally communicate with their brethren through our columns.

We call attention to the invitation which Professor Winchell gives those who may try the deposits of marl which may exist within their reach, to communcute to hear the results of their experience.

☞ In the first part of this number will be found a number of letters on the chess question, condensed so as to leave out all matter not pertinent to the question at issue. We have only room for one side this month, and in publishing it we do so out of courtesy to the writers, more than because we think the subject or its mode of treatment of the least utility Now one word to chess writers: as they say they have discovered certainly that wheat will turn to chess, and as chess is acknowledged to be a very useless plant, of little service to either man or beast, would it not be well to turn their attention to some mode by which not only all wheat will be prevented from so transmuting, but also to some method by which chess can be made to grow wheat. For ourselves, believing in the old saying that "an ounce of prevention is worth a pound of cure," we will be content to publish any method by which good clean seed wheat will be made to grow wheat, and all its proclivities for change from the family of the *Tritica* to that of the *Bromidæ* entirely destroyed. Meanwhile as this is the season for sowing, we recommend as preventatives the following:

1st. Have your fields plowed so that they will be sure not to be full of holes and hollows that will retain the surface water.

2d. Be sure that you sow nothing but wheat. We have seen some thousands of samples of wheat during the past two or three years, but have not yet seen one that did not contain other seeds.

3d. Be sure and spare no pains to have your seed well covered after it is put in the ground: and we mean by this that it should neither be plowed in too deep, nor left on the top of the soil by careless harrowing. Keep all cattle, hogs, sheep and horses out of your wheat fields after they are sown.

If there are any of our correspondents who are aware of other modes of preventing transmutation, we shall be happy to hear from them.

The Wheat Fly.

In the August number of the *Farmer*, the natural history and characteristics of the wheat fly were described, the description being principally taken from the very best authority we have on that subject, and to which, though published some years ago, very little additional information has been added up to this time. From these descriptions and observations it appears that the wheat fly has two principal periods for re-production, one in the fall and one in the spring; and that these periods of re-production may be delayed or hastened by atmospheric influences, such as by periods of cold wet weather, or by a dry warm season. It will be recollected that last season, in the fall the wheat sowing was much delayed by the warm dry period which prevailed just previous to the time when the fall wheat was sown. By a reference to the *Farmer* of last November, page 347, it will be seen that Mr. Woodruff, of Ann Arbor, in his report of the weather for September, says: "The first six days of the month were remarkable for extreme heat, (the maximum of every day ranging from 97 degrees to 100 degrees,) being the close of that extraordinary period of high temperature which commenced August 20th, and continued to 9th of September, or through eighteen consecutive days." That dry season will be recollected by all farmers, and it will also be remembered that after rain came, which was on or about the 9th, there was another very dry time, during which a great deal of the wheat was sown. Shortly after the wheat made its appearance above ground, reports

of the ravages of the fly were heard from all quarters, and especially in those sections where the seed had been sown early in the month of September. By referring to p. 292 of last year's *Farmer* it will be seen that Mr. Wm. Arford, of Clarkston, Oakland county, has made some observations, which seem to lead to the same conclusions. But in drawing any inferences from partial observation, the whole nature of the wheat fly and of the wheat plant must be taken into consideration.

In a state of nature the wheat plant, which seems to be the natural habitat, and food for the wheat fly, if untouched by the hand of man, would ripen and shed its seed during the months of July and August; that seed would bring forth the young wheat plant just at the time which nature has appointed for the insect to seek the proper place and plant where it will lay the egg which hatches forth its young. It will be seen by a reference to the article published last month that the fly lays its eggs upon the leaf of the young wheat plant, and it is evident that it is one of the conditions necessary for the growth of the young grub that the leaf should be young, and the plant in a certain stage of its growth. Thus the wheat and the fly are suited to each other by nature, and it appears from the evidence of farmers who have observed the habits of the insect, that when wheat is sown so as to approach most nearly to the natural habits of the plant, that it suffers the most severely from the insect. This points out one mode of attempting to counteract the ravages of the fly, by sowing later than is usually practiced. Mr. Arford says that wheat sown from the 14th to the 22d of September will not more than fairly get out of the ground before the fall equinoctial storms commence, during which the fly cannot deposite its eggs, and the wheat is so grown after this period that it is out of the reach of the insect. We are induced to think rather that the insect not finding wheat plants on which it may deposite its eggs, seeks other plants of a nature similar to the wheat, and the laying season having passed, it cannot harm the wheat crop. It is evident, therefore, that late sowing tends to prevent the fly from injuring the young wheat plant, but whether the risk of frost, rust and other incidents which we know are likely to happen to late sown wheat are not likely to overbalance the harm done by the fly, is another consideration which must be taken into account by the practical farmer.

Another preventative of the ravages of the fly, and one of the most important, is a rich soil thoroughly prepared. Few of our farmers will not have observed, after the experience of the past season, that on the poor soils, where the growth was thin, and the plants puny, the fields suffered the worst. During a journey into Kalamazoo and Calhoun counties the past season, when the complaints of the ravages of the fly were the loudest, the fields and parts of fields which had suffered the most, were evidently those which had been tilled with the least care. At the foot of knolls, and at the edges of lands where the richest particles of the soil had accumulated, the wheat was green, thick and luxuriant, and the fly did not appear to have affected it. Besides, when the "fly time" was over the fields which had been well tilled, and in which the soil had been made rich by proper culture, the wheat recovered its luxuriance, and gave almost as much of a crop as though it had never suffered from the fly. One of the main preventatives of the destruction caused by the fly, is careful cultivation, which it is observed will aid in making amends, and also, in some degree, prevent the farmer from losing his crop.

Another preventative which is considered effective, is grazing by sheep. Some of those who have paid attention to the subject, and have carefully watched the fly, as soon as it was noticed that the fly had begun to lay its eggs on the leaves of the young wheat, turned their flocks of sheep on to their wheat fields and allowed them to graze them close to the ground. This experiment was tried in 1817 in Maryland, and found to work well after six years experience. This is one of the cases in which a rich, well tilled soil will have the advantage, for the wheat will suffer very little from the grazing, if there be strength enough in the soil to promote the second growth of the wheat. Mowing the wheat in spring just after the fly is observed to have begun to lay its eggs upon the leaf, is also recommended as a remedy. This is only applicable to the crop in the spring, and its efficacy would depend altogether upon the judgment of the farmer in watching the progress of the fly, and upon the condition of the soil.

Another preventative is the turning under of the stubble very deep, immediately after harvest. This has been tried and found effectual, but we are not sure from the evidence, that this alone was the cause of the decrease and disappearance of the fly. Passing the roller over the wheat fields in the spring has been recommended as being a tolerably effective preventative, on the ground that, if the young wheat is rolled just when the fly is depositing its egg on the spring, the egg will be shaken off the leaf and destroyed. There is no evidence that this has been tried in a thorough manner. Most of the farmers who use rollers, are those who would grow a good crop under any ordinary circumstances, and their fields are generally in the best condition. We put little faith in the good done by rolling the fly. Another preventative recommended, is the burning of the stubble, immediately after harvest. This destroys the fly, but it also is apt to destroy other insects, which live upon the wheat insect, and destroy more of them than all other causes summed together. It is calculated that at least nine-tenths of the larvæ of the wheat fly are destroyed by insect enemies, which increase in the same proportion as the wheat fly does: of these in-

sects make their nest and lay their eggs in the larvæ of the wheat fly, while it is in the flax-seed state, and thus hinder it from doing injury to the plant. On this ground many are of the opinion that it is bad policy to burn over wheat stubble, or fields where wheat has grown. Still there are numerous cases cited where good crops have been raised in which the fly prevails, after land had been burned over, and there are others where even upon new fallows, which have been mostly burned over, the wheat has suffered severely.

To get rid of the ravages of the fly some farmers have had recourse to the coarser kinds of wheat, among which the Mediterranean wheat is a variety which has attracted the most attention. This wheat is dark in the color, and has a very thick skin, which renders it not so valuable for milling purposes as the finer varieties of white wheat. The reason why the Mediterranean wheat is able to resist the fly is that the sheath of the leaf adheres so closely and so firm ly to the stem that the insect pupa or maggot cannot force its passage between the leaf and the stem down to the joint where nature has placed the food on which the maggot moves and grows until it changes into the chrysalis or flax-seed state. As our wheat growers, however, are not prepared to give up the growth of the finer kinds of grain which they have cultivated for many years, we believe their better course is to experiment a little, exercising their own judgment as to the best modes of preventing the insect, after learning all that is already known about it.

Among all the plans recommended, that of late sowing appears to be the most practiced and the most efficacious, and that in most general use. All specifics, such as applications to the seed, or dusting with lime, plaster or ashes, seem to have but little, if any effect on the fly, though in a general way beneficial to the crop, as promoting its more rapid growth. To judge when to sow with a view to escape the fly, however, will require some practical observation by the farmer himself. If the weather be propitious, from what has been hitherto observed of the habits of the fly in this state, it is known that the fly is ready to deposit its eggs from the first to the middle of September, especially if the season has been dry and warm previons to that time. Should it have been wet and cold, the egg-laying period may be delayed for that time, but certainly not much longer. When the wheat is sown late, the fly may lay its eggs on the leaf, but as warmth is required to hatch out the maggott, there is a greater chance that they will not be hatched out at all, owing to the prevalence of rain storms, or of cold weather, or even of the white frosts which sometimes occur early in the fall, all of which have their influence in retarding the development of the maggot, or pupa; and which may also have their influence in preventing it reaching at its point of destination after being hatched, where it can lie protected during the winter, and be ready to come out in the spring; these are some of the reasons why wheat growers should attempt late sowing as a preventative. But to prevent any bad consequences to the crop from late sowing, it is of the utmost importance that the soil should be thoroughly prepared by deep plowing, even sowing and thorough cultivation. Without these, whether the fly prevails or not, a full crop cannot be expected, and it is folly to lay the blame of a poor harvest upon the wheat fly, when the exercise of a little observation would quickly tell the farmer that some of the fault of poor returns for seed sown lay at his own door, instead of on the back of this minute but destructive insect.

State Fair.

The Rules, Regulations and Premium List of the Seventh Annual Fair of the State Society, have been published in pamphlet form, and sent to members, and to officers of county societies throughout the State. The Fair will be held in this city, upon nearly the same grounds as formerly, and will commence on Tuesday, the second, and close on Friday the fifth of October. The Address, by Hon. Jacob Broom, of Philadelphia, will be delivered on the ground at 2 o'clock, of the 4th. The Plowing Match will take place at 10, A. M., of the same day. The public sale of Stock, Implements, &c., will commence at 12 o'clock M. of the 5th. Everything seems to promise well for a successful exhibition.

Strangers coming to the Fair will find the headquarters of the committee for their reception at the Agricultural Rooms, Cooper's block, Jefferson Avenue, on Tuesday evening, the 2nd, and on the days of the Fair, at the business office on the ground.

Especial Notice.

Our State Fair is now at hand. The friend of the Michigan *Farmer* will please take notice that we shall be on the ground as usual. The Farmer office will be there, and we especially request all who have unsettled accounts with us, to make it a part of their business in attending the Fair, to call and settle, that we may square up our books at the close of the year. It is of the utmost importance to us that this should be done.

It will also be an excellent opportunity for farmers to come forward and renew their old subscription or subscribe anew for the coming year. We hope to meet many such.

To the Ladies.—N. E. D. desires to return his sincere thanks to the ladies who have been kind enough to answer his advertisement. He regrets that he cannot marry more than *one*, and hopes that those who may be disappointed now will be successful in their next trial; and furthermore, that they all may be blest with good husbands, and live with them in the enjoyment of all the blessings of life, and that the Michigan *Farmer* may never cease to pay them its monthly visits with its "feast of fat things."

N. E. D.

The U. S. Agricultural Society.

The great national exhibition of stock, open for competition to the people of all the States of the Union, and also to the British American Provinces, is to be held at Boston on the 23d, 24th, 25th and 26th of October. To make this exhibition as worthy as possible, the city of Boston has subscribed twenty thousand dollars, and the use of a public square of about fifty acres in extent. There are to be ten thousand dollars distributed in premiums. As these shows are confined principally to exhibitors of stock, such as Horses, Cattle, Sheep and Swine, and the locations for this show is such as to permit a very fine exhibition of eastern stock, it is expected that it will be the best that has yet been held of this great National Association. We have received pressing invitations for ourselves, and such officers of the State Agricultural Society to be present as can make it their business to be there; Marshall P. Wilder is President, and William S. King is Secretary, and under their auspices, we have no doubt if good weather is granted them, that the show will be a magnificent one.

County Fairs.

ST. JOSEPH CO.—The annual Fair of this county is to be held at Centreville on the 27th and 28th of September. S. C. Coffinbury is President.

SHIAWASSEE CO.—Holds its sixth Annual Fair at Corunna, on the 26th and 27th of September. The Address will be delivered by L. H. Parsons, of Caledonia, on the last day of the Fair.

CASS CO.—The Fair of this Society will be held at——on the 27th and 28th of September, Emmons Buel Esq., of Charleston, will deliver the address, on the last day of the Fair. E. B. Warner, Secretary.

HILLSDALE CO.—The Agricultural Fair of this county will be held at Hillsdale, October 11th, 12th and 13th. The Annual Address will be delivered by R. F. Johnstone, Editor of the Michigan Farmer, on the 2d day of the Fair. F. M. Holloway, Secretary.

VAN BUREN CO.—The Annual Fair of Van Buren will be held at Lawrence on the 12th and 13th days of October. An Address will be delivered at 2 P. M. of the 2d day. O. H. P. Sheldon, Secretary.

☞ On the last page will be found the markets and the rates paid up the very latest moment of our going to press.

THE GENESEE VALLEY NURSERIES.—We ask attention to the advertisement of Messrs. *Frost & Co.*. of the Genesee Valley Nurseries. The reputation of these nurseries is very high.

SYRACUSE NURSERIES.—It will be seen that *Thorpe, Smith & Bartlett* advertise these nurseries which are at Syracuse, New York. We ask attention to their advertisement of Fruit and Ornamental trees.

☞ A letter from E. H. Gressy and one from Mr. Sisson are in type, but were unavoidably left over. Also one from T. W. Dunham, on the Potato Rot.

"RAMBLES" by "N." were in type for last number; we regret that they were left out by our foreman even after they had been marked for insertion. We have a letter from W. F. Sands, of Jonesville, a poem from G., and some other papers which will receive attention soon.

☞ We have to inform "Jenny" that her "lines" are scarcely appropriate for the *Farmer*. She would not care to own herself the author if she should see them in print.

MINNIE shall appear next month if possible. We hope "Avis" will give us something more original next time.—Birds in the Country might inspire more elevated and beautiful sentiments combined with the uses to which reference is made.

COCHRAN'S COMMERCIAL INSTITUTE.—We call attention to Cochran's Commgrcial Institute, which is on the last page of this *Farmer*. The advantage of these institutions are by no means confined to young men, who design to follow some Commercial pursuit. The varied information which is imparted in regard to the laws of commerce, the Bank systems, the Geography of trade and political economy are really essential to every man who would fill the duties of a citizen in a creditable manner, and perhaps we do not say too much when we express the opinion that there is no similar period of life devoted to education with so much advandtage as that spent in a well regulated Commecial Institution.

☞ The following announcement was received too late to be put among the advertisements, but the subject is of so much importance that we give it a place among our regular notices:

State Teachers' Association.

OFFICE OF SUP'T PUBLIC INSTITUTIONS,
LANSING, AUGUST 7, 1855,

Applications in accordance with the provisions of law having been received at this office from the following places and their vicinities, and the same being regarded by this department as eligible, the undersigned would hereby announce that a series of State Teachers' Institutes, to commence on the evenings of the days named below, and to continue in session ten working days, severally, will be held as follows, viz:

At Detroit, August 27th.
At Romeo, beginning September 10th.
At Flint, beginning September 24th.
At Grand Rapids, beginning October 1st.
At Niles, beginning October 15th.
At Coldwater, beginning October 22nd.

UTILITY OF TEACHERS' INSTITUTES.—Teachers' Institutes have received the earnest approval of eminent Educators since their establishment in this country, nearly fifteen years ago. They constitute an efficient agency both in providing well trained teachers for the school room, and in cultivating an intelligent and active public sentiment in favor of Education.—Wherever they have been properly conducted, the people have been awakened to a livlier interest in the education of their children, and a marked improvement in the character of the instruction given in our primary and higher schools, has been apparent. That this series of *State Teachers' Institutes* may be productive of great public benefit, it is earnestly requested that all good citizens will lend whatever of aid or influence they can to insure a full attendance of the Teachers of the State. And all persons contemplating the charge of Schools the ensuing season, it is hoped will avail themselves with alacrity of the benefits here offered, and attend some one of those Institutes from the *beginning* to the *close* of the session.

THE BOARD OF INSTRUCTION—Will be composed of able and experienced Teachers and Lecturers, and will include Members of the Faculty of the Normal School, and of other Literary institutions of the State.

LOCAL COMMITTEES.—It is desirable that a committee of active friends of the cause should be immediately appointed in each place where an Institute is to be held, with whom the undersigned may confer, and who may materially aid in making the necessary local arrangements for the successful prosecution of the enterprise,

LECTURES AND INSTRUCTIONS FREE.—All the expense which Teachers and others attending the Institutes will be for board, which in some instances I am assured will be at considerably reduced rates, and especially for ladies, of which due notice will be given by the Local Committees; or, at least, information may be had touching the matter by application to them.

IRA MAYH' W,
Sup't of Public Instruction.

ERRORS CORRECTED.—In the editorial notice of Mr. Osburn's stalk of chess, on page 250 of our last number, the printers have made us say Ottawa, when it should have been Nottawa.

In Mr. Hathaway's article on Hedges, page 240, 16th line, read "plash" instead of "plant;" under the heading of "Cost and Economy of a Hedge," same page, read "plashing" instead of "plastering."

In the description of Mr. Linden's Farm, page 238, the expression occurs, "leaving him nothing but his house and a determined resolution;" read "hands" in place of "house."

☞ We call the attention of stock-purchasers to the advertisement of Seth A. Bushnell in our present number. The facilities for transporting stock afford great inducements for farmers to profit by so good an opportunity to improve their breeds.

PURE FRENCH MERINOES.—It will be noticed by an advertisement on another page that A. L. BINGHAM of West Cornwall, Vermont, offers for sale his flock of imported French Merinoes. We learn by a letter from him that he will be among the visitors at our State Fair this fall, and will probably bring some specimens of his sheep with him.

STONE PIPES FOR DRAINS AND WATER.—We publish a communication relative to stone pipe, which has been found a very excellent conductor of water for long distances, and which we think is superior in many respects to either iron or lead pipe, especially for farm purposes, and also where water rams are used for the purpose of forcing a supply of water up hill. In villages this stone pipe laid in water lime cement, would form a cheap and healthy pipe with which to connect with the main pipes, and we think it will work its way into very general favor, as soon as it is known where it can be had and the rates.

☞ The notice of Mr Fifield's heifer was in type for last month, and we supposed it was in the Farmer, till it came from the press. Articles will now and then get crowded out, or overlooked, unintentionally; our friends must have patience, we will endeavor to do them all justice in time.

WATER LIME.—Messrs. Hickock & Galloway have become agents for the sale of a very pure article of Water Lime, manufactured at Sandusky. They have appointed agents for the sale of this article in most of the villages along the line of the Central Road, whose names will be found in their advertisement. This water Lime, from what testimonials have been shown us, is one of the best articles of the kind offered in this market, and by those building cisterns, cellars, or laying water pipes, will be found just the material wanted.

WILLOW PEELING MACHINE.—About a month ago we had a visit from a Mr. Geo. Colby, of Jonesville, Vermont, who has invented a machine for peeling the bark from the Osier Willow. It is a very ingenious machine, and at the same time very simple, easily worked, and not liable to get out of order. There are none of the machines yet offered for sale, but this will not be the case long, as Mr. Colby was about to sell rights to manufacturers. Mr. C. is quite a young man, but seems to have thoroughly studied the nature of the basket willow.

L. SCOTT'S REPRINTS.—We have to return our thanks to Messrs. Scott & Co. for their copies of the Quarterly Reviews and of Blackwood with which we are furnished. There are few cheaper or more valuable periodicals published than these, and no family pretending to keep up with times in a critical knowledge of science, literature, politics, theology, or general knowledge of public affairs in Europe should be without one of them. They are filled with papers from the most eminent writers in Great Britain, and no one can read them without being impressed with the great amount of talent which is employed to fill them. A new volume has just commenced, and as it is a good time to subscribe, we call attention to them. Blackwood's Magazine and one review, or any two of the reviews may be had at the rate of $5 per annum.

THE BUFFALO NURSERIES.—We call attention to the advertisement of Messrs MANLEY & MASON of Buffalo, who have now the possession of the Buffalo Nurseries. Their stock of fruit and ornamental trees is very complete.

Meteorological.

REVIEW OF THE WEATHER FOR JULY 1855.

BY L. WOODRUFF, ANN ARBOR, MICH.

Thermometer at.....	7 A. M.	2 P. M	9 P. M.
Highest temp. in month,	80° (19 h)	91° (16th)	79° (18)
Lowest " "	57 (7th)	65 (.0)	60 (20)
Average	65.0	78.8	69.1

Monthly mean.....70 9°

MONTHLY VARIATIONS.

Greatest daily mean,.....	82° (16th.)
Least,.....	63° (17th.)
Greatest daily range,.....	28° (8th.)
Least " "	5° (17th.)
Clear days,.....	14
Part clear,.....	4.
Cloudy days,.....	13.
Days on which rain fell,.....	18.
Total amount of rain,.....	3.740

WINDS.

W., 4 days; N., 1 day; E., 1 day; S., 5 days SW., 8 days; NW., 2 days; NE., 8 days; SE., 2 days.

REMARKS.

There has been much more than the usual amount of cloudy and stormy weather, this month, and the quantity of rain is beyond any known precedent in this vicinity. Storms have been severe as well as frequent, and accompanied by an unusual amount of thunder and lightning. A thunder shower on the morning of the 19th was accompanied by a wind approaching in violence to a tornado, and and which was very destructive to buildings, trees, fences &c in this vicinity. The severest storm of the month occurred here on the 29th, when over two inches of water reached the ground, half of which fell in the space of fifteen minutes. The rain was most abundant during the last month, when there was also much cloudy weather. The average temperature is four degrees below that of July, 1854.

There was thunder and lightning on 16 days.

BUTTER WANTED.

THE highest price paid for Good dairy Butter at all times, or advance made on account of any left with me for shipment to New York.

WALTER CHESTER.

Aug. 19, 1855. [sept.2 n]

Chinese & Fancy Poultry.

THE Subscriber is prepared to furnish Superior Fowls, consisting of the following popular varieties:

Brama Pootras, old and young, Buff and White Shanghais, Black Spanish breed, direct from imported Fowls, English red Caps bred from fowls imported last winter, White Dorkings, Gold and Silver Laced Seabright Bantams, Black Bantams &c., also Hong Kong, Bremen and Wild Geese.

The above Fowls are warranted pure and from the best of stock, and will be sold in lots or single pairs at low prices.

All letters of inquiry cheerfully responded to.

Address

PHILANDER WILLIAMS, Taunton, Massachusetts.

sept6m

A. FROST & CO.,

GENESEE VALLEY NURSERIES,

ROCHESTER, N. Y.

THE stock of Fruit and Ornamental Trees &c., offered by us this season is very large and much the finest that we have had for sale.

Our Nursery Grounds at the present moment occupy one hundred and fifty acres of fine land completely covered with very thrifty and well grown plants, which enables us to furnish the entire orders of our customers, and give the most perfect satisfaction.

Packing of trees and plants is done in the most superior manner by men of long experience in the business, so that plants may go thousands of miles in perfect safety.

Our Wholesale Catalogue, (No. 4.) for the Autumn of 1855, and Spring of 1856, has just been published for gratuitous distribution, containing the price of trees &c., in large quantities.

Nurserymen are particularly directed to notice our choice young Nursery Stock, described in the above catalogue, such as fruit trees 1 year old, from bud or graft. Fruit tree stock of every description in large quantities; evergreens of small size &c.

The following Catalogue containing prices are sent *gratis* by mail to those who inclose a one cent postage stamp for each.

No. 1. Descriptive Catalogue of Fruit.
No. 2. " " Ornamental Trees, shrubs, roses &c.
No. 3. " " Dahlias, Verbenas, Green House Plants &c.
No. 4. Wholesale Catalogue or trade list, [just published.]

sept1t

WHEAT, CORN, AND OATS.

WE ARE PREPARED TO PURCHASE ANY amount that may be offered of the above Grains. that is in sound merchantable condition.

Apply at our office, foot of Second street.

sept3m J. L. HURD & CO.

Durham Cattle and other Stock at

PRIVATE SALE.

THE Subscriber will sell twenty-five head of Short Horns of both sexes and various ages. Among them are several Bull Calves from my Premium Bull, Hubback. The cows and heifers have also been served by him

Also a superior lot of Jacks and Jennets, and a choice selection of South Down Sheep.

Animals purchased previous to September 9th, can be delivered at Columbus, at the Ohio State Fair. Those purchased before September 25th, can be delivered at Cleveland, Detroit, Chicago, or intermediate points, at the time of the Michigan and Illinois State Fairs.

I may be found at home except from the 9th to the 22d of September, and the 1st to the 10th of October.

SETH A. BUSHNELL.

Hartford, Trumbull Co., O., July 21st 1855. aug3t*

ROGER'S WHEEL CULTIVATOR.

THE subscribers are still manufacturing ROGER'S PATENT WHEEL CULTIVATOR, and have the exclusive right of making and vending them in the counties of Calhoun, Kalamazoo, Cass, Van Buren and Berien. This machine has taken the highest premium at the State and County Fairs wherever exhibited, and is the BEST WHEEL CULTIVATOR now in use for preparing summer fallows, covering seed, and cultivating corn. All orders filled on short notice. Price at our Foundry, $40 each.

We also manufacture STEAM ENGINES, MILL IRONS, and agricultural implements in general use. A. ARMS & CO.

Kalamazoo, Mich. jet

SEYMOUR & LONG,

CARRIAGE, WAGON AND SLEIGH MAKERS.

KEEP constantly on hand, Light Wagons and Carriages, Open and Top, of their own manufacture, of the most improved Patterns. All who are in want of such would do well to call and examine our assortment before going elsewhere. Prices satisfactory, and terms easy. SEYMOUR & LONG.

Battle Creek, Mich. Nov. 10th, 1854. dec6m

C. P. WOODRUFF,

DEALER IN

HARDWARE,

IRON,	CARPENTERS'
NAILS,	JOINERS',
STOVES,	COOPERS',
TIN PLATES,	BLACKSMITHS',
SHEET IRON,	TOOLS,

HOUSE TRIMMINGS,

FARMING IMPLEMENTS.

June6m No. 73, Woodward avenue, Detroit.

THORP, SMITH, HANCHETT & CO.,

PROPRIETORS OF THE

SYRACUSE NURSERIES,

Offer for the Fall sales an unusually large stock of Nursery productions, containing nearly all

THE LARGER AND MINER FRUITS,
ORNAMENTAL TREES AND SHRUBS,
ROSES, DAHLIAS, PHLOXES, GREEN HOUSE PLANTS &C., AND EVERGREENS, RARE, WELL GROWN AND SYMMETRICAL.

Of Pear trees, Standard and Dwarf—the former from 1 to 4 the latter 1 and 2 years old. Their stock is probably the most extensive in the country, and the trees are all remarkably thrifty and well-grown. A limited number of BEARING trees can be supplied of several of the best sorts at from 75 cents to $1 each. By leaving the choice of the varieties mainly to the proprietors, trees of great beauty and vigor of growth, as well as excellence in quality of fruit, may be relied upon.

A fresh importation of the best DUTCH BULBOUS ROOTS from Holland will be ready for delivery in September.

A few commendations taken from their correspondence are annexed as an assurance that their articles are satisfactory in quality, and compare favorably with those of other Nurseries.

"A word in favor of your trees.—I think I never saw so fine trees in any Nursery, and I have visited a good many."—*David O. Berry, Esq., Newark, N. J.*

"No one has given more perfect satisfaction than you did in the bill we made with you."—*Edward D. Hobbs, Esq. near Louisville, Ky.*

"The last trees I had of you last Fall, were the first from the East that have paid any profit, for the simple reason that too much inferior and unsaleable stock was always sent."—*M. S. Dunlap, Esq., Leydon, Ill.*

"I have just been to Mr. W———'s. His Pears from your Nursery are the finest I have seen this DRY SEASON. In fact they are fine for any season; I was sorry mine were from another source."—*Sam Edwards, Esq., La Moille, Ill.*

"The 3000 Pear trees from your Nurseries last Fall give universal satisfaction. They are superior to any I have ever seen that were grown at the Rochester Nurseries, and the packing could not be excelled.—*E. B. Coleman, Esq. Peori, Ill.*

☞ Catalogues furnished as usual.

Syracuse, Sept. 1st, 1855.

Raspberries, Gooseberries, Apple Seedlings, and Potatoes.

FRANCONIA and North River Antwerp Raspberries. Very productive, and good profitable market varieties. $1,00 per dozen, $5,00 per hundred, $30 per thousand.

Houghtons Seedling Gooseberry. (true,) Wonderfully productive; always free from mildew. 25c each, $2,50 per doz. Yearling plants $1.50 per doz., $10 per hundred.

Apple Seedlings. Two years old, $5 per thousand. Culls $2 per thousand.

Seed Potatoes, Of the following choice varieties; Halls June, Ash Kidney, Mexican Wild, Yam, Black Pink Eye, and Black Imperial, $1 per bush. Early Manley or New June (the best early sort in cultivation) and Purple Chili, $3 per bu.; at these prices if ordered before 10th Oct., to be delivered this Fall.

☞ Each parcel will be carefully packed, marked and delivered at R. R. depot, Express office or otherwise as directed; after which they will be at the risk and expense of the purchaser. Orders should be sent early and accompanied with a remittance. Money promptly returned by mail when unable to fill orders.

A. G. HANFORD.

Waukesha, Waukesha Co., Wis. [sept 2:]

Wheat and Flour Wanted, at Detroit.

I WILL pay the highest market price for good sound Wheat and advance liberally on Flour or Butter left with me to forward to either New York or Boston to my correspondents. Warehouse on river, between 1st and 2d streets.

WALTER CHESTER.

Aug 19, 1855 [sept.2m]

MARKET OPENED!

WANTED IMMEDIATELY,

50,000 Bushels White Wheat.

FOR WHICH I WILL PAY CASH AND THE highest price at my warehouse between 1st and 2d Streets on Detroit River.

The Market will doubtless open a better price than

CAN BE SUSTAINED!

Those who have their grain ready will be well rewarded for **Extra efforts** to put it in the market without delay.

sept3m WALTER CHESTER.

IMPORTANT TO FARMERS.

MOORE'S

SEED PLANTER,

OR

GRAIN DRILLER!

PATENTED JULY 2d, 1850.

THIS most valuable implement of husbandry, which is being used for drilling Wheat, Rye, Barley, &c, is so constructed as to drop any quantity of Seed per acre, and at any depth required. The great superiority of the drill system over the old mode of sowing grain broadcast, must be obvious to every cultivator of the soil — A saving at least of 20 per cent. of seed, and nearly as much in labor a manifest increase in product: a great safeguard against drought and the effects of frost, are all matters of moment to the

ENTERPRISING FARMER.

Of scarcely less moment, however, is the satisfaction to be derived from the beauty and certainty of the operation.

The subscribers are now manufacturing and prepared to furnish

DRILLS

On the Most reasonable terms, at the shop of T. A. Haviland. All orders thankfully received and promptly attended to, by

T. A. HAVILAND. A. BELDING. G. H. RHODES.

Ann Arbor, July, 1855. [j'y:3t]

HOW TO MAKE MONEY!

BOOK AGENTS, AHOY!

THE GOOD TIME HAS COME!

Good Crops!—Good Prices!—Good Books!—Good Business!

MILLER, ORTON & MULLIGAN,

Publish the following superior books, which are

THE BEST BOOKS FOR AGENTS

published in this Country, for the sale of which they want an active Agent in every county of the United States and Canada. The business pays from

FIVE TO EIGHT DOLLARS PER DAY,

according to the fitness and energy of the Agent, and there is **no Possibility of Loss.** A small capital from twenty to fifty dollars only is required.

1. PROF. GOODRICH'S LAST GREAT WORK, A

HISTORY OF ALL NATIONS,

From the earliest Period to 1854, by S. G. Goodrich, 1223 royal 8vo. pp. 700 illustrations, 70 Maps.

☞ Sold only by Agent—exclusive territory giving.

2. A COMPLETE ENCYCLOPEDIA OF ANIMATED NATURE,

Containing the history, habits and modes of life of all the classes living beings on earth, in the ocean, and the air. Quarto—1300 Illustrations.

☞ Sold only by Agents—not for sale in Bookstores.

3. THE FARMER'S EVERY DAY BOOK,

Containing the popular elements of Practical and Theoretical Agriculture, and 1200 Laconics and Apothegms. Octavo, 654 pages.

4. FROST & DRAKE'S INDIAN WARS AND CAPTIVITIES,

In two parts. I. The Indian Wars; and II. The Indian Captivities of the United States, 360 illustrations.

☞ Sold only by Agents.

5. THE FAMILY DOCTOR, OR HOME BOOK OF HEALTH AND MEDICINE,

By a Philadelphia Physician. 630 octavo pages.

6. THE PICTORIAL ENCYCLOPEDIA,

Of History, Biography and Travels—octavo, 648 pages, illustrated with 300 engravings.

☞ Catalogues of the and of 150 other popular books for the people, containing full particulars, sent gratis, on application.

Address

MILLER, ORTON & MULLIGAN, Publishers.

25 Park Row, New York, or 107 Genesee-st., Auburn.

sept2t

WOKK FOR ALL AND WORK THAT PAYS!

Read Miller, Orten & Mulligan's Advertisement,

"HOW TO MAKE MONEY."

RHODES' FEVER AND AGUE CURE,

FOR the Prevention and Cure of INTERMITTENT and REMITTENT FEVERS, FEVER and AGUE, CHILLS and FEVER, DUMB AGUE, GENERAL DEBILITY, NIGHT SWEATS, and all other forms of disease which have a common origin in Malaria or Miasma.

This is a NATURAL ANTIDOTE which will entirely protect any resident or traveler even in the most sickly or swampy localities, from any Ague or Bilious disease whatever, or any injury from constantly inhaling Malaria or Miasma.

It will instantly check the Ague in persons who have suffered from any length of time, from one day to twenty years, so that they need never to have another chill, by continuing in use according to directions. The patient at once begins to recover appetite and strength, until a permanent and radical cure is effected.

One or two bottles will answer for ordinary cases; some may require more. Directions printed in German, French, and Spanish, accompany each bottle. Price One Dollar. Liberal discounts made to the trade.

JAMES A. RHODES Providence, R. I.

EVIDENCE OF SAFETY.

NEW-YORK, June 11, 1855.

"I have made a chemical examination of "RHODES' FEVER and AGUE CURE," or "ANTIDOTE TO MALARIA," and have tested it for Arsenic, Mercury Quinine, and Strychnine, but have not found a particle of either in it, nor have I found any substance in its composition that would prove injurious to the constitution.

JAMES R CHILTON, M D., Chemist."

EVIDENCE OF MERIT,

"LEWISBURG, Union Co., Pa., May 2, 1855.

MR. J. A. RHODES—Dear Sir: The box of medicine you sent me was duly received on the 11th of April. I have sold about half of it, and so far the people who have used it are satisfied that it has cured them. It has certainly stopped the Ague in every one that has used it, and six of the cases were of long standing. My sister, who has had it for five or six years back, and could never get it stopped, except by Quinine; and that only so long as she would take it, is now, I think, entirely cured by your remedy.

C. R. McGINLY.

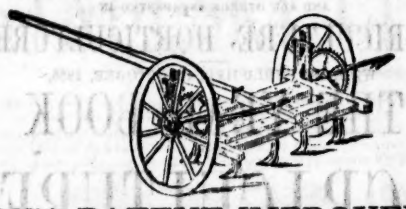
CAUTION TO AGUE SUFFERERS.

Take no more Arsenic, Tonics, Mercury, Quinine, Febrifuges, Strychnine, or anti-Periodics of any kind. The well known inefficiency of those noxious poisons proves them to be the offspring either of false medical principles, or of mercenary quacks. The only remedy in existence that is both sure and harmless, is

RHODES' FEVER AND AGUE CURE.

For sale by PRATT & HANMER, of Detroit and by respectable dealers throughout the State. jyly

The Great American Cultivator.



IDE'S PATENT IMPROVED.

6000 NOW IN USE!

THE MOST POPULAR FARMING IMPLEMENT IN THE WORLD.

THE FARMING PUBLIC are hereby informed that Letters Patent have been taken out by the subscriber for his recent great improvements in the manufacture of IDE'S CULTIVATORS; improvements so great as to entirely revolutionize the whole system of Farming, by reducing the expense of cultivation one-half or more. Wherever they have been introduced they have met the decided aprobation of Farmers.

IDE'S PATENT CULTIVATOR is manufactured by Levi Wells, Buffalo st.: near the Bull's Head, Rochester. Price $30.

aug3t D. O. & W. S. PENFIELD

KALAMAZOO ADVERTISEMENTS.

CORNELL & HOGEBOOM,

—MANUFACTURER OF—

CARRIAGES AND BUGGIES.

ALL orders promptly attended to, and all work warranted, for we use none but the best of materials. Shop near Arms & Co.'s Machine Shop, corner of Rose and Eleanor streets,

Kalamazoo, Mich. 55jy1y

POTTER, GALE & PARSONS,

Wholesale and Retail

—DEALERS IN—

Heavy and Light Hardware, Agricultural and Horticultural Implements.

Agents for

Ketchum's Mowing Machine.
Manny's Mowing and Reaping Machine.
Seymour and Morgan's Self-Raking Machine.
Fairbanks' Platform and counter scales.
J. M. R. Davidson's Fire Xing safes. '55jytf

KALAMAZOO, - - - - - - - - MICHIGAN

CRITTENDEN & Co

Manufacturers of Carriages, Pleasure Wagons AND SLEIGHS,

KEEP constantly on hand, Light Buggies, Farmers' Wagons, and Sleighs of the most approved style, made of the best Eastern Timber.

All who are in want of any of the above articles will do well to call and examine before going east, as we are confident that the price will be satisfactory. Terms made easy and work warranted.

Brick Shop, Corner of Burdick and Water street.

Kalamazoo, Mich. Jan. 1855. feb-tf.

EAGLE FOUNDRY.

W. A. BURT, & SON,

—MANUFACTURERS OF—

STEAM ENGINES,

Mill Machinery, Iron and Brass Castings, Screws of all kinds and sizes, and repairing done generally.

KALAMAZOO, MICH. [ap-tf.]

O. H. GREGORY,

BOOKSELLER AND STATIONER,

DEALER IN

FANCY ARTICLES, &c.,

At the Old Established Bookstore, Main St.,

[jy-tf] **KALAMAZOO, MICH.**

CARR & HUGHES'

IMPROVED BRAN-DUSTER.

THE SUBSCRIBER has purchased the right of this machine for the counties of Monroe, Hillsdale, Lenawee, Wayne, Washtenaw, Jackson, Macomb, Oakland, Livingston and Ingham, and solicits the attention of mill owners to this improvement. It was patented and introduced in 1851, and in every case where it has been used, has given the highest satisfaction, and in no case has been removed from a mill where it has been used. The subscriber is ready to warrant this machine, where used, to increase the yield at least one per cent., and not to lower the grade of the flour in any degree, something which has been sought in vain in all the machines which have preceded this. It is compact, simple in construction, and durable, being made in the most workmanlike and tasty manner, is an ornament in any mill, requires but little power and trifling attention. Any one wishing to purchase can be furnished with a machine and right, with ample reference and certification by addressing

A. M. BIDWELL,
Ann Arbor Mich.

REFERENCES:

N. C. Goodale, Delhi, Mich.	P. R. Loomis, Jackson, Mich
J. Hart, Battle Creek, "	C Trip, Ann Arbor, "
Gage & Haynes, Chicago, Ill.	R. Ales, " " "

[nov tf]

BOOTS AND RUBBERS.

Economy is the Road to Wealth.

IF you would save money, you will buy your boots and shoes at the low price boot and shoe store of T. K. ADAMS, where you will always find a large, well selected and seasonable stock of Boots and Shoes of all kinds and qualities; viz: Ladies' and Misses' Gaiters, Ties, Slippers and Buskins, of great varieties; Children's Shoes of every style.

Men's Boy's and Youth's Boots, Monterays, Oxford Ties, Pumps and Slippers, &c. &c. You have but to call to be fitted and suited. Experience has taught thousands that they can save money by buying their Boots and Shoes at the Low Price Boot and Shoe Store of

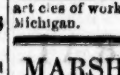
T. K. ADAMS,
[oct-1y] No. 63 Woodward ave.

PURE BLOOD FRENCH MERINOS.

HAVING Sold my old farm, I shall therefore sell one half of my present flock of Imported French Merino Sheep, consisting of over four hundred, this coming fall. Also, I would say, that I will shear at my next sheep shearing festival, to be held at Middlebury, during the first week in June, 1856. 80 Ewe lambs dropped last March, against an equal number of any one manareising, for quality and quantity, according to live weight unwashed or cleansed, each man keeping his sheep as well as he knows how, and also according to the age of the fleece, (as some may wish to shear lambs older or younger) in the United States

A. L. PINGHAM.
West Cornwall, Aug 13, 1855. [sept.2t]

S. A. SPERRY.



MANUFACTURER of Carriages, Buggies and Waggons, which are constantly for sale.—Painting and Trimming executed with despatch.—Also Blacksmithing in all its various branches. All articles of work done to order. Shop on Detroit St., Ann Arbor, Michigan. jeltf

MARSHALL ADVERTISEMENTS.

C. B. TURNER,

MARSHALL,.....MICHIGAN.

MANUFACTURER OF

Butter, Soda and Boston Crackers,

And wholesale dealer in Confectionery, Cider, Vinegar, Dry Groceries, &c.

[oct-1y]

J. T. VERNER, JR.,

—DEALER IN—

SHELF AND HEAVY HARDWARE,

Copper, Tin and Sheet Iron Ware.

Mechanic's tools and farming implements. Stoves of all kinds.

[oct-tf] MARSHALL, MICHIGAN.

PURE SUFFOLK PIGS!

AND

Suffolk and Leicestershire Cross Bloods.

THE subscriber offers for sale several pairs of pure Suffolk Pigs, and the cross between Suffolk and Leicestershire, either in pairs or single Pigs. Warranted pure and thorough bred. Price per pair, $20, or $10 each for Pigs of eight weeks old and upward. All orders promptly attended to. S. P. WORMLEY,

Marshall, Mich., May 25, 1855. [jy-6m]

AYER'S
CATHARTIC PILLS

Operate by their powerful influence on the internal viscera to purify the blood and stimulate it to healthy action. They remove the obstructions of the stomach, bowels, liver, and other organs of the body, and, by restoring their irregular action to health, correct, wherever they exist, such derangements as are the first causes of disease. An extensive trial of their virtues, by Professors, Physicians, and Patients, has shown cures of dangerous diseases almost beyond belief, were they not substantiated by persons of such exalted position and character as to forbid the suspicion of untruth. Their certificates are published in my American Almanac, which the Agents below named are pleased to furnish free to all inquiring.

Annexed we give *Directions* for their use in the complaints which they have been found to cure.

FOR COSTIVENESS.—Take one or two Pills, or such quantity as to gently move the bowels. Costiveness is frequently the aggravating cause of PILES, and the cure of one complaint is the cure of both. No person can feel well while under a costive habit of body. Hence it should be, as it can be, promptly relieved.

FOR DYSPEPSIA, which is sometimes the cause of *costiveness* and always uncomfortable, take mild doses—from one to four—to stimulate the stomach and liver into healthy action. They will do it, and the *heartburn*, *bodyburn*, and *soulburn* of dyspepsia will rapidly disappear. When it has gone, don't forget what cured you.

FOR A FOUL STOMACH or *Morbid Inaction of the Bowels*, which produces general depression of the spirits and bad health, take from four to eight Pills at first, and smaller doses afterwards, until activity and strength is restored to the system.

FOR NERVOUSNESS, SICK HEADACHE, NAUSEA, *Pain in the Stomach, Back or Side*, take from four to eight pills on going to bed. If they do not operate sufficiently, take more the next day until they do. These complaints will be swept out from the system. Don't wear these and their kindred disorders because your stomach is foul.

FOR SCROFULA, ERYSIPELAS, *and all Diseases of the Skin*, take the Pills freely and frequently, to keep the bowels open. The eruptions will generally soon begin to diminish and disappear. Many dreadful ulcers and sores have been healed up by the purging and purifying effect of these Pills, and some disgusting diseases which seemed to saturate the whole system have completely yielded to their influence, leaving the sufferer in perfect health. Patients! your duty to society forbids that you should parade yourself around the world covered with pimples, blotches, ulcers, sores, and all or any of the unclean diseases of the skin, because your system wants cleansing.

RHEUMATISM, GOUT, *and all Inflamatory Fevers* are rapidly cured by the purifying effects of these Pills upon the blood and the stimulus which they afford to the vital principle of Life. For these and all kindred complaints they should be taken in mild doses, to move the bowels gently, but freely.

AS A DINNER PILL, this is both agreeable and useful. No Pill can be made more pleasant to take, and certainly none has been made more effectual to the purpose for which a dinner pill is employed.

PREPARED BY

J. C. AYER,

Practical and Analytical Chemist,

LOWELL, MASS.

AYER'S
CHERRY PECTORAL,

For the rapid Cure of

COUGHS, COLDS, HOARSENESS, BRONCHITIS, WHOOPING-COUGH, CROUP, ASTHMA AND CONSUMPTION.

This remedy has won for itself such notoriety for its cure of every variety of Pulmonary disease, that it is entirely unnecessary to recount the evidences of its virtues in any community where it has been employed. So wide is the field of its usefulness, and so numerous the cases of its cures, that almost every section of the country abounds in persons publicly known, who have been restored from alarming and even desperate diseases of the lungs by its use. When once tried, its superiority over every other medicine of its kind is too apparent to escape observation, and where its virtues are known, the public no longer hesitate what antidote to employ for the distressing and dangerous affections of the pulmonary organs which are incident to our climate. And not only in formidable attacks upon the lungs, but for the milder varieties of COLDS, HOARSENESS, &c.; and for CHILDREN it is the pleasantest and safest medicine that can be obtained.

As it has long been in constant use throughout this section, we need not do more than assure the people its quality is kept up to the best that it ever has been, and that the genuine article is sold by—

J. S FARRAND, Detroit;

F. Eckstein Jr., Cincinnati, Ohio; J. H Reed and Co., Chicago; C. West and Co., Toledo, Ohio; Wheldon and Rhodes, Sandusky, Ohio; Wm. Fiske, Cleveland, Ohio.

AGRICULTUTAL Furnaces, from ½ to 2 bbls. size.
Augtf. By D. O. & W. S. PENFIELD.

TO FARMERS

AND ALL OTHERS INTERESTED IN

AGRICULTURE, HORTICULTURE.

WILL BE PUBLISHED, IN OCTOBER, 1855,

THE YEAR BOOK
OF
AGRICULTURE,
OR THE
ANNUAL OF AGRICULTURAL
PROGRESS AND DISCOVERY,
FOR 1855.

EXHIBITING THE MOST IMPORTANT DISCOVERIES AND IMPROVEMENTS IN

AGRICULTURAL MECHANICS,
AGRICULTURAL AND HORTICULTURAL BOTANY,
AGRICULTURAL AND ECONOMIC GEOLOGY,
AGRICULTURAL ZOOLOGY, METEREOLOGY, ETC.

Together with

Statistics of American Growth and Production.
A List of Recent Agricultural Productions.
Agricultural Patents, with Notes by the
Editor, on the Progress of American
and Foreign Agriculture,
for the Year 185 .

BY DAVID A. WELLS, A. M.

Member of the Boston Society of Natural History, formerly Chemist to the Ohio State Board of Agriculture; Editor of the Annual of Scientific Discovery, Familiar Science &c., &c

It is evident that a publication of this character, giving a complete and condensed view of the Progress of every Department of Agricultural Science, free from technical and unnecessarily scientific descriptions, and systematically arranged so as to present at one view all recent Agricultural Facts, Discoveries, theories and Applications, must be a most acceptable volume to every one interested in the Cultivation of the Soil, or the Diffusion of useful Knowledge.

THE "YEAR BOOK OF AGRICULTURE"

will be published in a handsome octavo volume, comprising upwards of 300 pages, and will contain an elegant steel Portrait of a Distinguished Agriculturist, together with fine illustrations of NEW AGRICULTURAL MACHINES, STOCK, FRUIT, &c., together with a series of

BEAUTIFULLY COLORED ENGRAVINGS.

Although the publication of this work will be attended with very heavy expenses, it will be issued at the low price of $1,00, thereby enabling every FARMER and PLANTER to possess a copy.

On receipt of the published price it will be sent free per mail, to any part of the United States. As the sale will be very large, all orders should be sent immediately.

A LIBERAL DEDUCTION TO CLUBS.

Address, CHILDS & PETERSON,
124 Arch Street, Philadelphia.

☞ *Agents wanted to sell the above valuable work.*

s pl1t

YOUNG NURSERY STOCK.

THE subscribers, in addition to their large supply of well grown Fruit and ornamental trees, shrubs, plants, &c., offer to Nurserymen and others, the following young stock:

400,000 Apple Trees,	1	year from the graft,		
150,000 Standard Pear Trees,	1	year old	from the bud,	
150,000 Dwarf "	"	2	"	"
350,000 Apple Seedlings		1	"	"
150,000 Cherry "		1	"	"
200,000 Osage Orange		2	"	"

The whole of this stock is remarkably well grown, and will be sold in large parcels at very low rates.

For order stock see general advertisment

☞ Catalogues Nos. 1, 2, 3, 4, and 5, sent to applicants enclosing a stamp to prepay postage.

THORPE, SMITH, HANCHETT, & CO.

Syracuse, 16th July, 1855. 3m

RAIL ROAD Horse Powers, Threshers and Separators, Saw Mills, Straw Cutters, always on hand.
[Jy-3t*] D. O. & W. S. PENFIELD.

SANDUSKY CITY WATER LIME.

THIS Cement is pronounced by competent judges to be superior to any other Water Lime manufactured in the United States, and has in every case given entire satisfaction to those using it. It sets quickly and hardens very rapidly, and it is truly what its name imports, "Hydraulic Cement. For cheapness and durability it cannot be surpassed. We would call the attention of persons building under ground or under water structures, or bridges, aqueducts, cisterns, etc., to its superior advantages.

All orders addressed to the undersigned; sole agents for Michigan, will receive prompt attention.

HICKOK & GALLOWAY,

Corner Third and Water Streets, DETROIT, MICH.

Opposite M. C. R. R. Depot.

The Sandusky City Water Lime can be had also of the following persons:

U. C. COLLINS, Niles, Mich.
COOK & THOMAS, Kalamazoo, Mich.
J. D. BIXBY, " "
POTTER, GALE & PARSONS, " "
J. H. POLHEMUS, Battle Creek, "
D. B. & G. C. BURNHAM, Battle Creek, Mich.
D. DE FOREST, Ann Arbor, "
D. DE FOREST, Chelsea, "
C. M. BREWER, Marshall, "
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W. H. HAYES & CO., Jackson, Mich.
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E. V. COWDEN, Jackson, "
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GENERAL COMMISSION MERCHANTS,

AND DEALERS IN

PRODUCE, WATER LIME, PLASTER, SALT, &c.

AGENTS FOR BEREA GRINDSTONES.

Will attend to the purchase and sale of produce and make liberal advances on consignments for sale in Detroit, Buffalo, New York and Boston Markets.

HICKOK & GALLOWAY,

OFFICE CORNER OF THIRD & WATER STREETS, OPPOSITE M. C. R. R. DEPOT.

AGENTS FOR MICHIGAN, OF SANDUSKY CITY HYDRAULIC CEMENT OR WATER LIME.

THE BUFFALO NURSERIES

AND

Oaklands Gardens and Green Houses,

RECENTLY consolidated under the proprietorship of the undersigned, contain now one of the largest and most complete stocks in the country.

OUR FRUIT TREES

Are of the highest order, embracing all the best varieties of

Apple, Apricot,
Pear, Nectarine,
Peach, Cherry,
Plum,

Together with Grapes, Currants, Gooseberries, Figs, Raspberries and Strawberries.

THE ORNAMENTAL DEPARTMENT

is complete, comprising all the most desirable kinds of Trees, and of large size. Also a large stock of ROSES, and other SHRUBS and PLANTS.

THE GREEN HOUSES

Are undoubtedly the most extensive in the country, and in point of construction the most complete. The stock of Plants is large and well assorted; and to those who are filling new houses, offers great inducements.

Catalogues will be furnished to applicants and all enquiries cheerfully answered.

Direct to MANLEY & MASON,
[sept 3m] Buffalo, N Y

F. P. MATHER & CO.,

Importers and Dealers in

CROCKERY,

CHINA, GLASS, BRITTANIA, & SILVER PLATED WARE,

LAMPS AND LOOKING GLASSES,

TABLE CUTLERY AND FANCY WARE.

No. 221 Jeff. Ave., Kearsley's Block, Opposite Firemen's Hall,

DETROIT,.....MICHIGAN.

September, 1854. [16m.]

MERRILL, POWERS & CO.,

MANUFACTURERS OF

Stone Pipe for Conducting Water, Gas, Sewerage, &c.

THE above Pipe is manufactured from a superior article of Potters Clay, glazed upon the inside with an *extra superior* article of pure clay. (Which in the process of burning forms a coat of pure glass.) Is then burned so that it is harder than the hardest granite rock, will conduct water miles and discharge itself just as pure as when it leaves the spring, neither earth, water, gas, frost, or acids, of any kind have any effect upon it whatever; will stand a pressure of at least 500 feet head. It is made in joints of about 22 inches in length, with a tenon on one end, and a socket on the other; is laid in a good article of water lime cement, which becomes stone of itself after remaining in the ground say 30 days.—Below we give prices per rod at the factory.

For 1 inch caliore		$1,12½
" 1¼ "	"	1,25
" 1½ "	"	1,50
" 2 "	"	2,00
" 2½ "	"	2,84
" 3 "	"	3,30
" 4 "	"	4,62

All orders or communications in relation to the above pipe addressed to AKRON, or MIDDLEBURY, Summit Co., Ohio, will receive prompt attention.

Middlebury, Summit Co., Ohio, Aug. 8'55. [sept.1y]

RAYMOND & COOK.

WHOLESALE AND RETAIL

BOOKSELLERS & STATIONERS,

167 JEFFERSON AVENUE, 2d DOOR FROM THE CORNER OF WOODWARD AVENUE.

AT this establishment may always be found a large stock of Religious, School, Theological, Scientific and Miscellaneous Books. Letter and cap paper. Plain and fancy stationary &c., &c. The publications of the American Bible Society, American S. S. Union, Methodist Book Concern, Mass S. S. Society, and other religious Societies, always on hand and for sale at Catalogue prices.

FRANCIS RAYMOND, THOMAS M. COOK.
Detroit, July, 1855. 6m

Michigan Farmer Office,
DETROIT, September, 1855.

FLOUR in this market has varied but little in price during the week. Millers have not sent forward any very large quantity, and buyers are unwilling to purchase at present, owing to the very great uncertainty that exists as to the value of Michigan flour in the eastern market. The prices at present range from $6.50 to $7.00 for good fair lots. There is a good deal of flour from other States being put in market here. Fine flour from Sandusky mills, Ohio, sells at $8.50 at retail; and a superfine article made from Illinois white wheat brings the same rates, but only in small quantity to supply families.

WHEAT.—There have been but few arrivals of wheat in this market during the past week, either by wagons or by the Railroads, and the rates paid for wheat that has come forward have been regulated altogether by the quality of the grain. For the very best, $1.35 was given for a single load, but the average has brought only from $1 20 to $1.30. Very few samples have been shown that had not considerable brown wheat in them.

CORN.—The supply of corn is equal to the demand, which is light. There have been no sales except in small lots to supply the retail trade at 75 cents per bushel.

OATS.—The quantity of oats that have been grown this season leave no alternative but that the prices should decline, and accordingly the grain has gone down in price till it is now but 35 cts. per bushel for small quantities, and some lots from teams have sold as low as 32 cents, being a decline of 10 cents for the week.

CORN MEAL.—This is not in such request as it was a few weeks ago; but the price is advanced and it now sells at $2.00 per 100 lbs.

RYE.—There has been none offered. It is worth from 90 cts. to $1.00 per bushel.

BARLEY.—The sales are very light at present, and quotations range from $1.37½ to $1.50 per 100 lbs.

BUTTER AND CHEESE.—Of cheese the chief supply is from Ohio, which sells here at from 9 to 11 cents, according to quality. There is very little true Hamburg to be found here. Butter has advanced, owing to a short supply, though why it should be so we are at a loss to know, with such fine and luxuriant pastures as there has been this season. Good roll sells at 17 to 20 cents, and firkin butter well put up and in good condition, brings from 15 to 17 cents.

FISH.—There is but a small supply of fish on the market. White fish is worth $9.00 to $9.25 per bbl., and half bbls. bring $4.75.

EGGS.—By the quantity are worth 12 cents per dozen, and they are retailing at 14 to 15 cents.

HAY.—There is not a large supply of hay offering in market at present. The price paid for it is from $8 to $10 per ton. It promises to be cheap this season.

PORK.—The supply of pork packed in this city is pretty much used up, and our supplies are coming principally from Chicago. Mess sells here at $-.1 per bbl. Hams are worth 13 to 14c per lb. and shoulders range from 9 to 11 cents.

BEEF.—Cattle are offering in fair supply in market and are bought readily at 3 to 3½ cents live weight. Sheep are ranging from $2.00 to $2.50 per head, and hogs can be had at $6 00 per hundred, dressed.

SEEDS.—Clover is in very slow demand. It is held at $6.75 to $7.25 per bushel. Timothy seed is but little called for at present, and is quoted at $3.00 to $3.25.

BEANS.—Not plenty, and selling at $2,25 per bushel.

APPLES.—There are no dried apples offering in market as yet. For first rate green apples, such as Yellow Harvest and Golden Pippin are worth $1,50 to $2,00 per bbl.

POTATOES.—The very best quality of Potatoes sell at 50 cents per bushel. Inferior and small brands range from 25 cents to 37½ cents.

SALT.—Coarse salt sells at $2,25 per cask. Fine salt is worth $1,75 per bbl.

PLASTER.—Oswego plaster sells at $1,00 per bbl. Sandusky plaster ground at the mills at $6,50 per ton, Grand River $1,50.

WATER LIME.—Best Sandusky cement WaterLime sells at $1,50. New York Onondaga Water Lime at $1,37½.

HOPS.—There are but few selling; 31 to 33 cents per lb. are the rates paid.

FREIGHTS.—There is nothing doing in freights of any consequence beyond what the regular propeller and steamboat lines are doing, between this port and Buffalo and Dunkirk. The rates are 15 cents on flour per bbl; Oats 3½ cts; Corn, 4½; Wheat, 6 cents per bushel. With Ogdensburgh and Oswego, and the lower ports, there is nothing doing yet. Rates are nominal at 37½ cents on flour to Ogdensburgh.

☞ A correspondent, writing from Waterville, Ohio, enquires about orchard grass. We have had no practice with it; but those who have had, do not seem to think a second trial necessary. There have been attempts made to introduce the orchard grass for several years past, but it seems to be no farther advanced as a favorite grass now than it was fifteen years ago. Those who have tried it complain that it is apt to grow tussocky, and to kill out all others which may be sown with it.

COMMERCIAL INSTITUTE.

Waterman Block, Woodward Ave.

Detroit, = = = Michigan.

W. D. COCHRAN, Principal,

E. COCHRAN, Ass't in Ladies Department,

H. G. SPAFFORD, Esq., Lecturer,

M. E. BARRETT, Teacher of Penmanship.

TO THE INDUCEMENTS WHICH THIS INSTITUTE has heretofore presented, and which have been responded to by a liberal patronage, Mr. C. now offers the additional advantage of thorough instruction in Penmanship

Mr. Barrett's system is *Spencerian*, his style elegant and business like, his explanations lucid and strictly scientific, and in these respects he can well afford to challenge competition.

Mr. C. presents the further inducement of a new system of teaching, which he has originated, and of which he has secured the Copy Right. With these advantages Mr. C. can with confidence claim for his institution a rank equal to that of any other either *east or west*.

The following testimonials will vouch for the character of the new system:

We have examined Mr. Cochran's system of teaching Book Keeping in which the Student is required from a simple statement of transactions to frame the original documents of every kind, enter them in the Day Book, Cash Book and auxiliary Books and file them away, going through the various processes of Counting-room duty.

We believe that Mr. C. has supplied a deficiency in Mercantile instructions that has long been felt, by rendering the student familiar with original documents and the entries to be made from them, and we feel confident that the system must commend itself to public favor.

Henry Ledyard, Esq.	Wm. J. Fish, Acct. H. P. Baldwin,
R. R. Sanger, Cashier of Mich. Insurance Company.	Geo. R. Smith, Acct. Stephens & Field,
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John Owen, Esq.	C. B. Ketchum,
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V. W. Bullock,	F. F Parker,
F. Buhl and Co.	Caleb Ives,
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